NATIONAL NUCLEAR WASTE POLICY ACT OF 1981

HEARINGS

BEFORE THE

SUBCOMMITTEE ON NUCLEAR REGULATION

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

NINETY-SEVENTH CONGRESS

FIRST SESSION

ON

S. 1662

A BILL TO ESTABLISH A LIMITED PROGRAM FOR FEDERAL STORAGE OF SPENT FUEL FROM CIVILIAN NUCLEAR POWER-PLANTS, TO SET FORTH A FEDERAL POLICY, INITIATE A PROGRAM, AND ESTABLISH A NATIONAL SCHEDULE FOR THE DISPOSAL OF NUCLEAR WASTE FROM CIVILIAN ACTIVITIES, AND FOR OTHER PURPOSES

OCTOBER 31, 1981—RICHLAND, WASH.
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NATIONAL NUCLEAR WASTE POLICY ACT OF 1981

SATURDAY, OCTOBER 31, 1981

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON NUCLEAR REGULATION,
Richland, Wash.

The subcommittee met at 1:30 p.m., in the auditorium, Federal Building, Richland, Wash., Hon. Slade Gorton presiding.

OPENING STATEMENT OF HON. SLADE GORTON, U.S. SENATOR FROM THE STATE OF WASHINGTON

Senator GORTON. Good afternoon. On behalf of the U.S. Senate Committee on Environment and Public Works, I welcome you to this hearing on Senate bill 1662, the National Nuclear Waste Policy Act of 1981. I'm especially delighted that Congressman Morrison is here with me this afternoon. The solution to this problem, of course, will require cooperation by both Houses of Congress, and because bills somewhat similar to S. 1662 are now under active consideration in the House of Representatives.

This important piece of legislation is the culmination of several years of effort on the part of the Senate Committee on Energy and Natural Resources and the Committee on Environment and Public Works. The goal of the proposed legislation is formally to establish a firm, clear national policy and program plan for managing and ultimately disposing of nuclear waste from powerplants and other domestic commercial activities. The development of an environmentally acceptable solution to the permanent disposal of nuclear waste is considered by many to be the critical factor in determining the future of nuclear power in the United States. The potential significance of the proposed bill, or whatever legislation eventually evolves from it, cannot be overstated.

The purpose of this hearing is to inform the citizens of Washington State of the major provisions of the bill, to explore the likelihood and extent of potential consequences in relation to the State and to provide an opportunity for citizen input and dialog on the proposed legislation prior to its final consideration by the Senate.

I specifically requested that this hearing be held in Richland because I believe that there is a high probability that the proposed legislation will have a major impact on the citizens of Washington State and particularly on the residents of the Hanford area. Washington State currently has in storage at Hanford some 70 percent of the total volume of high-level nuclear waste which has been generated in the

U.S. nuclear weapons programs since early in World War II. In addition, it is generally acknowledged that the basalt formations at Hanford may provide an acceptable medium for a permanent repository. Because of the proximity of this potential repository site to the waste already stored there, the conclusion is inescapable that Hanford is a prime candidate as a permanent repository for these defense wastes. It does not require a great extension of this logic further to conclude that Hanford is also a prime candidate for a commercial nuclear waste repository or for certain of the other facilities which would be constructed in response to S. 1662. It is apparent that Washington State may have much to gain or to lose in the proposed legislation. That is what motivated this hearing.

The hearing was scheduled on relatively short notice because of the time limit for the committee's consideration of the bill. The bill's sponsors want to get the bill to the Senate floor for a vote before the end of the 1981 congressional session. The Energy and Natural Resources Committee reported it out on October 21, 1981. Under our rules the Environment Committee has only 30 days and must report the bill to the full Senate no later than November 20, 1981.

S. 1662 and the issues to be discussed at this hearing do not relate to initiative 394 or to nuclear powerplant construction funding. Though some of you may have opinions on those issues, they are essentially out of order at this congressional hearing.

Both Houses of the 96th Congress considered legislation on high-level nuclear waste disposal. The bill we are considering today, S. 1662, developed out of that consideration. It was introduced by Senator McClure and Senator Stafford, chairmen of the Energy and Natural Resources Committee and the Environment and Public Works Committee respectively, on September 24 of this year.

We will attempt to move through the witnesses promptly and allow all, who we can, to speak. Some witnesses have been planned and invited to provide testimony, but others simply representing their own views and that of the general public may also testify, but we will conclude by 5 p.m.

I also have with me an opening statement for this hearing by Senator Jackson. I'll read the first paragraph, which sets the tone of his proposals:

> Today's hearing before the Senate Committee on Environment and Public Works is to address the important legislation now before the Senate on nuclear waste management policy. I commend Senator Gorton for arranging this hearing, and I'm sure that he will play a key role in the development of the legislation as it is considered by the Environment and Public Works Committee. I regret that a longstanding commitment in Seattle precluded my being able to attend this hearing, but I will review the transcript with interest for suggested improvements in S. 1662, which was also referred to the Energy and Natural Resources Committee on which I serve as ranking minority member.

Skipping toward the end, Senator Jackson makes these statements:

> There are many facets to the civilian nuclear waste disposal issue which the Congress is trying to address. One, we must resolve the problem of spent fuel storage by deciding when and if the Secretary of Energy can relieve the utility of spent fuel which is accumulating at operating nuclear power plants. Two, we must address the question of whether spent fuel will be stored until a reprocessing capability is established in this country, or whether some spent fuel will be disposed of. Three, we must decide on how to achieve the proper balance in the schedule for disposal of high level wastes between the competing objectives

of protecting public health and safety, and in demonstrating the disposal of nuclear waste is possible. Four, we must structure the legislation in a way to ensure that no individual state believes that it has been unfairly singled out as a site for a nuclear waste disposal facility. Five, we must provide an opportunity for interaction with the Secretary of Energy to ensure that the concerns of the people of the affected state are properly addressed so as to maintain public acceptance of the disposal facility in that state, and six, we must also provide a funding mechanism for these activities pursuant to which the full cost of the disposal of civilian nuclear waste is borne by those who derive the benefits from nuclear power, as opposed to taxing the general population.

I may say that I find myself very much in agreement with Senator Jackson's views on these matters, and obviously because of his long experience and his membership on the Energy Committee he will play a major role in whatever legislation has been produced by the Senate of the United States.

I will put Senator Jackson's complete statement into the record.

[The statement follows:]

STATEMENT OF HON. HENRY M. JACKSON, U.S. SENATOR FROM THE STATE OF WASHINGTON

Today's hearing before the Senate Committee on Environment and Public Works is to address the important legislation now before the Senate on nuclear waste management policy. I commend Senator Gorton for arranging this hearing, and I am sure that he will play a key role in the development of the legislation, S. 1662, as it is considered by the Environment and Public Works Committee. I regret that a long-standing commitment in Seattle precluded my being able to attend this hearing, but I will review the transcript with interest for suggested improvements in S. 1662 which was also referred to the Energy and Natural Resources Committee on which I serve as Ranking Minority Member.

I have a few key points that I wish to make regarding the nuclear waste problem.

For many years, the Atomic Energy Defense Programs of the Department of Energy have performed crucial national security-related functions at the Hanford Reservation for acquiring special nuclear materials. An unavoidable by-product of these activities is highly radioactive waste generated in the production reactors. These high-level wastes have been stored in interim facilities which were intended for relatively short periods of storage in comparison the period of significant radioactivity found in these wastes. Typically, the tanks at Hanford for storage of liquid wastes were designed for an interim storage period of about 20 to 30 years.

While these highly radioactive wastes have been stored without any significant threat to public health and safety, in the past there have been a few incidents at the Hanford Reservation of leakage from some of the tanks storing such wastes. In recent years, a program to remove most of the liquids and selected heat-generating radioactive elements has improved the situation by reducing the likelihood and possible extent of near-term problems with these older single-shell tanks. However, the problem of the permanent disposal of these wastes remains to be solved.

The problem is a substantial one and will require careful planning to achieve possible solutions. Federal expenditure levels may be constrained over the next few years by the efforts to control federal spending. However, it is essential that a program for the disposal of these wastes in a permanent manner be initiated and carried out so that over a period of the next 15 to 25 years, the wastes currently stored in the interim facilities at Hanford are safely isolated from the biosphere for a very long period of time.

The Department of Energy will not be starting from scratch in this effort to develop a program plan for treating the military-related high-level wastes. There have been several studies and reports on how to manage these wastes. These reports describe the high-level wastes resulting from atomic energy defense activities stored at the Hanford Reservation. They also set forth alternate plans to be considered, describe various technologies that may be applied to solidifying the wastes, set forth risk assessments related to the activities connected with the permanent disposal of the wastes, and give cost estimates associated with the alternative plans.

The Hanford site has more than 60 percent of the high-level wastes resulting from atomic energy defense activities in the United States. Even when the high-

level wastes that would result from reprocessing spent nuclear fuel from commercial nuclear powerplants is added to the current inventories of atomic energy defense high-level wastes, the high-level wastes stored at Hanford constitute about 50 percent of the nation's entire high-level waste inventory. In other words, the Hanford Reservation already has more than its fair share of the nation's burden of high-level waste.

It is time that we put in place a program to begin to deal with this existing problem given its long standing, dating back nearly 40 years. I am not saying that we are not doing things in the defense waste program, but rather that there is no integrated program with specific dates for making programmatic decisions and establishing detailed program milestones so that the people in the State of Washington will have some measure of the federal commitment to the disposal of these interim-stored wastes.

I believe that the people in the State of Washington have been making an important contribution to our national defense for a very long time by accepting the storage in interim facilities of the high-level wastes from atomic energy defense activities. Continued public support is important for these ongoing activities. To help maintain that support, we must begin now to ensure that a permanent solution is found for the wastes that are already stored in this state.

I also think it is important that there be equitable sharing in the national responsibility for high-level wastes. The prospect of a civilian waste repository in this state at a time when a final solution for the current high-level waste inventory is not being pursued vigorously is not apt to find broad public support. Moreover, there is an existing low-level waste facility for commercial disposal of wastes from commercial activities near Richland. It is performing a critical need, but it adds to the public perception that a sufficient contribution to the national nuclear waste problem is being made by the State of Washington.

The focus of today's hearing is on legislation primarily dealing with the civilian nuclear waste problem. The question of what can and should be done with such nuclear waste is of great concern to the general public. Thus, I believe it is important for the Congress to provide direction to the Department of Energy through legislation to assure the public that the problem is being properly addressed by the federal government.

In the last Congress along with Senators Johnston and Church, I introduced legislation aimed at resolving a number of problems relating to spent nuclear fuel and wastes from civilian nuclear activities. Unfortunately, comprehensive legislation was not enacted even though it passed both Houses. However, we were able to enact the part of the comprehensive legislation which addressed the issue of low-level waste disposal. This law permits the states to enter into compacts for regional disposal of low-level waste.

I think it is important to note that the states in the northwest have already successfully negotiated a regional compact for the disposal of low-level waste, and I believe that the Congress will turn its attention shortly to consideration of the approval of this compact.

In this Congress, Senator Johnston and I reintroduced a comprehensive nuclear waste bill, S. 637, addressing many of the same points encompassed in the legislation passed by the Senate last year. Senator McClure and others introduced S. 1662 in September which is similar to S. 637 in general concept but reflects different perspectives in certain instances based upon the policies of the Reagan Administration. Some of these changes are improvements which I endorse.

On October 21, 1981, the Committee on Energy and Natural Resources ordered S. 1662 reported with some amendments which represented language closer to the concepts in S. 637. While I believe additional changes need to be made in S. 1662 as reported, I did not object to its being reported promptly to ensure consideration by the full Senate at an early date. The Committee on Energy and Natural Resources may meet again and approve committee amendments to perfect further the bill as ordered reported.

I wish to point out an important aspect of the pending legislation. A requirement for a proposal on monitored retrievable storage facilities to be submitted to the Congress is contained in Title V of S. 1662 and Title IV of S. 637. While this approach to the long-term disposal of high-level waste is not necessarily preferable to permanent geologic disposal, I believe that it deserves careful consideration. A monitored retrievable storage facility which could safely store high-level waste for the most critical period of the first 300 years is not dependent upon finding a near-perfect geologic medium. In fact, a possible approach to such storage has been tested by the facility in Gable Mountain on the Hanford Reservation.

An important point is that such a facility could be located in virtually any state in the nation. The National Governors' Association believes that it is essential to have a regional approach to the disposal of high-level wastes, just as we are trying to foster a regional solution to the low-level waste problem.

The governors have endorsed the idea of not making one or perhaps two states the recipients of the nation's high-level wastes from both military and civilian activities. The likelihood is that over time, three or four facilities for the permanent disposal of high-level waste will be required. Finding a suitable geologic medium for disposal of high-level waste in each region of the country may not be possible. In which case, it may be desirable to consider a monitored retrievable storage facility for meeting that region's needs for disposal of high-level waste.

Title VII of S. 1662 provides for a role for state participation in the development of a repository of a monitored retrievable storage facility for disposal of high-level wastes and spent fuel. It provides an equivalent role for an affected Indian tribe in a state where either type of facility is to be located. This title, along with Section 404 of the bill dealing with site characterization activities, will provide not only a meaningful role for a governor and any affected Indian tribe in the all-important period prior to the Department of Energy's application to the Nuclear Regulatory Commission for a construction permit, but also for all ensuing activity. Moreover, the Congress will provide further protection for the states and Indian tribes not only through the review process contained in the final legislation, but also through the funding of any disposal facility for which the Secretary proposes to build.

There are many facets to the civilian nuclear waste disposal issue which the Congress is trying to address.

We must resolve the problem of spent fuel storage by deciding when and if the Secretary of Energy can relieve a utility of spent fuel which is accumulating at operating nuclear powerplants.

We must address the question of whether spent fuel will be stored until a reprocessing capability is established in this country, or whether some spent fuel will be disposed of.

We must decide on how to achieve the proper balance in a schedule for disposal of high-level wastes between the competing objectives of protecting public health and safety and demonstrating that disposal of nuclear waste is possible.

We must structure the legislation in a way to ensure that no individual state believes that they have been unfairly singled out as a site for a nuclear waste disposal facility.

We must provide an opportunity for interaction with the Secretary of Energy to ensure that the concerns of the people of the affected state are properly addressed so as to maintain public acceptance of a disposal facility in that state.

We must also provide a funding mechanism for these activities where the full cost of the disposal of civilian nuclear waste is borne by those who derive the benefits from nuclear power as opposed to taxing the general population.

These are the key issues that must be resolved by any legislation addressing the nuclear waste problem. I hope that we can enact legislation in this Congress to help solve the nuclear waste problem confronting this nation. I beleive this problem must be solved in a safe way at an early time in order to maintain public acceptance for the use of nuclear power in our country. I believe that the problem is technically solvable. However, I believe that we must find solutions in a way that maintains public credibility that the nuclear waste problem is truly behind us. I also believe that there must be an equitable sharing on a regional basis for disposing of the nation's nuclear waste to ensure that no one state feels unfairly burdened.

Senator GORTON. At this point I'd like to ask Congressman Morrison for any opening statement he may have.

OPENING STATEMENT OF HON. SID MORRISON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. MORRISON. Thank you, Senator Gorton. I would like to thank you on two particular points. One, to have all of you appreciate the fact that our own Senator asked for the only hearing which is

being held here today outside of the Washington, D.C., area on this particular bill, and I'm delighted that he chose to come to Hanford, and for the many experts that I see in the audience who have had a great deal of technical skill in this area. Also, I would like to thank you for including me. This is a Senate committee hearing, and so I'm sort of an interloper. I want to assure all of you, though, that I'm going to listen with great interest to your testimony and will be relaying some of the information, perhaps most of it that I pick up today, to the House committees who are also at the same time considering various bills. We think from the action you're taking that you probably will get your bill to us first and perhaps it will become the mechanism.

I can only vouch for the tremendous interest in this subject that I have found here in the Hanford area. I think the hearing is going to point out something that's been pointed out to me over the last decade or so, and that is that a lack of technology is not the problem in dealing with nuclear waste. I would love to go through the bill first and strike out anywhere that it says "disposal" and substitute the word "storage," because I'm convinced from what I've learned that we have a very valuable resource in the materials that we choose to deposit somewhere, and that one of these days we will be going back to find them and extract from them the latest—the materials that we find that we can actually utilize.

You will also hear, I'm sure, some frustration expressed here because, as I understand it, the work out at the Near Surface Test Facility and other efforts in research on nuclear waste have really not developed anything that was not anticipated as much as 10 or 15 years ago, so I'm hoping that Senate bill 1662 before your committee today, Senator Gorton, can be the appropriate mechanism to move us on down a path which has so long been neglected, to the detriment of the total nuclear industry.

Senator GORTON. Thank you, Sid. We will start with a panel of three witnesses, and we'll ask them to come up and sit opposite us here: David Stevens from the Governor's office here in Washington; State Representative Ray Isaacson from Richland; and Pat Costello, assistant to the Governor of the State of Idaho. I would say to each of you that the written testimony which you had already submitted will be included in the record in full, so that if you wish simply to paraphrase it or to add other points, it will be appropriate for you to do so.

Dave, we'll start with you.

STATEMENT OF DAVID STEVENS, REPRESENTING HON. JOHN SPELLMAN, GOVERNOR, STATE OF WASHINGTON

Mr. STEVENS. Thank you, Senator Gorton, Representative Morrison. I'm pleased to be here this afternoon. Unfortunately, the Governor cannot be. He is in Olympia, in the process of calling a special legislative session, which will convene 1 week from Monday, and his schedule in developing the preparations for that session have kept him from attending this hearing, unfortunately. I'd also like to add our thanks to Senator Gorton, for you being able to schedule this meeting here. We were unable to attend the October 5 hearing on this matter

and we understand there's another hearing in Washington the first part of November, which we would be unable to attend also because of the legislative session, so it does provide an opportunity, and again, we do appreciate it.

I will try to summarize the part of the testimony. I may read a bit from it, but we'll try and move through it so you'll be able to move on to other people who need to be testifying.

The Governor feels that it's certainly past time for the Federal Government to have in place a rational program to deal with the growing need to resolve the critical question of how this country will dispose of the wastes from nuclear facilities and activities. The debate has continued as we all know for many years, and the national interest is not well served by further delay. He does favor clear and logical action by Congress in resolving those issues that have been debated far too long.

At the same time, that he applauds the renewed examination of an acceptable approach. There are some questions pertaining to the schedule that is contemplated in S. 1662 which should be specifically dealt with. While we've had long delays in developing a permanent program, it's probably well for us to avoid a headlong rush into something in an attempt to make up for lost time. The approved program must contain the elements which will allow for us to have a reasonable timeframe within which to operate, allows us to get all the necessary information and to permit the development and continued cooperation and efforts of those States who are both directly and indirectly involved.

The bill probably needs to reflect a slightly greater confidence by the Federal Government in the capacity of States to be responsibly involved. The bill shows great improvement over previous efforts where the role of State government was not as well structured, and we do appreciate the careful attention to that need. However, there are some additional areas which we feel could be strengthened in the bill.

We also want to support the kind of a bill that will increase the confidence of the public for a rational policy and a program that will deal with high-level radioactive wastes. While there may be some merit in attempting to determine one optimal site for a waste repository as one of the key elments of S. 1662, it would be appropriate to carefully consider and adopt a regional concept for the disposal of high-level wastes similar to the legislation which was adopted by Congress last year pertaining to low-level radioactive wastes and calling for a reasonable solution. The impact of transportation of high-level wastes for thousands of miles from one part of the country to another would not necessarily be a logical course of action. Therefore, the Governor would recommend that the legislation include that we select more than one site, perhaps three sites as national repositories and that further exploration and examination be conducted to see, in fact, where those should be located and in in what kind of a medium.

We must move to a solution more quickly than we have in the past, but attempting to make the decision points called for in this legislation simply may not be possible without a modification. Some timeframes which should follow in an orderly basis have been compressed so they seem to be parallel rather than consecutive.

The State of Washington has a strong interest and concern in the matters of nuclear waste. There are numerous programs, both civilian and defense related, that have been carried on in this State for many years. As you know, there are two nuclear reactors under construction with a third recently put on a 2-year "hold." An application for relocation of two other proposed nuclear powerplants on the Hanford Reservation is scheduled to be filed with our State energy facility site evaluation council by the end of the year.

The State expects to be ongoing participants in both the devising of a national policy in concert with other States, and in the carrying out of that policy and program. Senate bill 1662, if modified, can be a reasonable tool in setting forth both objectives and procedures needed to resolve this longstanding issue. There are a number of parts of that bill which must be briefly covered before concluding testimony, and I think the section on site designation is just a further explanation of the Governor's concern with the one site preference which appears to be in the existing language of the legislation as now being considered.

Insofar as a timetable is concerned, the first date which is called for in the legislation is January 1, 1982, at which time the Secretary of Energy, after some consultation with other agencies, promulgated guidelines, and we suggest that since that's only 61 days from this day without a piece of legislation in hand, that that probably is not a very practical deadline. So, in part, illustrative of the fact that there may be too much compression in the times that are outlined in that bill, and that we may need to deal with moving back or perhaps eliminating some of those interim dates so that they really can be achievable.

Without prolonging additional comment except as Senator you may wish to question, it is essential for us to have a workable timetable for the accomplishment of a national program. Additional work on a reasonable schedule may be advantageous and I think it would be helpful for States and other agencies that are involved. We must schedule the program with a full understanding of the complexities that are involved in identifying and resolving the issues. We do not care to have decisions made on the basis of the pressure of time, if such decisions would result in the designation of some sites that have already received considerable study, but might not be found to be the optimal sites for ultimate selection. Time pressures may well distort the careful reasoned decisions that ultimately must be made.

In regard to the role of the States, as indicated previously we are gratified that there is a specific title, title VII, placed in the act that deals specifically with the process and the involvement of the Federal Government with the States. Strong participation by potential host States, but, in addition, States indirectly affected by the development of the repository program, as well as those States generating high-level wastes is required if we are to be successful.

We do not approve of a joint Federal-State process that merely treats States as entities that are informed of Federal actions taken or about to be taken. The Governor would support a process which, at the outset, brings the State in as an equal partner in the siting process.

Certainly some elements of partnership appear in the existing language, and the requirement that the Federal Government would need to "negotiate an agreement with a potential host State," is probably valid, and would be important in making sure that there are commitments that could be pursued and would be pursued to the completion of the agreement. Such an agreement should reach to all aspects of the proposed process. An agreement should create a working arrangement where there is continuous State involvement so that it is possible to track activities as they are planned, carried out, and evaluated. The use of an agreement has merit in documenting responsibility to both the State and Federal Government. It should not be construed, however, as a final commitment, but as a working tool which reinforces the desires of both governments to secure needed information about all facets of the program.

There is one specific concern relative to how State objections to the proposed national program may be resolved in Congress. The bill provides that if there are objections by a State to the plan of the Department, that one house of Congress would have to support the state's position within 60 days. The Governor feels that the formula needs to be turned around so that the federal plan, whether there is objection by the State, should have the support of both Houses of Congress. The burden of proof as to the reasonableness of a DOE plan should be on their shoulders and not on the State or States.

In regard to the section on the test and evaluation facility, the objectives certainly to have some sort of a facility to demonstrate the feasibility of a plan for packaging, handling, and disposing of high-level wastes is appropriate. We have some question about the utility of such a project, since elsewhere in the bill the schedule for licensing a repository requires that the NRC act on its first application by January 1, 1982, which is the same date that a test and evaluation facility would become operational. I would think that if, indeed, such a facility is constructed it would be appropriate that we would have information and data as a result of that facility's operation which would become part of the developmental plan for the final plan in developing a repository.

One of the unresolved issues arising from previous congressional debates has been the distinction between wastes created by civilian and defense activities. Obviously, we need to be concerned about security implications of our national defense capability, but we certainly would support the inclusion or at least the careful examination of the potential for including all wastes, regardless of how they have been derived in terms of being covered by this national program. It certainly is a complex issue, but we would certainly support some means that would enable States to deal with the totality of the question.

We are encouraged by the desire of Congress to again address the critical issue of dealing with the nuclear waste question. We must move forward diligently in resolving the difficult technical, political, and social issues that have arisen. Our State has had substantial experience in dealing with many of the aspects of nuclear activity over many years and can contribute an array of knowledge and insight that can be useful. Our State is ready and willing to work with Con-

gress, DOE, NRC, other Federal agencies, and other States in working out reasonable and rational solutions.

The act of Congress last year in reading the nuclear low-level nuclear waste program was an important beginning for us. It did demonstrate the confidence that Congress had in establishing a national policy and in charging States with the responsibility of essentially solving the problem through a development of a system of regional compacts and sites. Considerable action in all parts of the country has taken place since the passage of that legislation. As you are aware, here in the Northwest the States of Washington, Idaho, and Oregon along with Utah actually have created this country's first regional compact to deal with low-level waste questions. That question has now gone to Congress for your attention and ratification. If Congress can feel confident of the significant, substantive role for State governments, that the solving of one of this country's most persistent and difficult issues will come more quickly.

I don't mean to necessarily suggest that we have identical solutions because obviously there's a stronger Federal responsibility in the question of high-level waste, but the pattern of relying more concretely and more positively on the role of the State governments' place should be fully recognized in this legislation, with the lead responsibility resting with the Federal Government, and with continous interactions among States through a substantive consultation and concurrence procedure, I certainly would be much more confident that an acceptable policy can be both designed and adopted by Congress in the very near future.

Thank you very much.

Senator GORTON. Representative Isaacson?

STATEMENT OF RAYMOND E. ISAACSON, SENIOR ENGINEERING ADVISER, ROCKWELL HANFORD OPERATIONS AND REPRESENTATIVE, WASHINGTON STATE LEGISLATURE

Mr. ISAACSON. Thank you, Senator Gorton and Representative Morrison. I certainly am pleased to have this opportunity to address this committee on this issue today, and I'm glad to see that Senate bill S. 1662 is moving right along.

Senator, Max Benitz couldn't make it today. He does send his regards and he wants it to be noted on the record that he does endorse our testimony today. He also would like to applaud the technical community for a good job he observes they've been doing, and he wants it to be noted so.

I'd like to start out by commending the initiative of the Senate, especially in addressing the urgent need for a national commitment to build a nuclear waste facility.

It is appropriate that the Congress, by law, give direction to the program in order to provide the requisite impetus to the national nuclear waste program. It is apparent that the intent of this bill, S. 1662, is to provide that impetus.

In keeping with the letter from Senator Stafford, my testimony will be directed toward the appropriateness of the Hanford site for a deep geological disposal facility followed by concerns with specific provisions of the act.

I'd like to start out by talking about the Hanford site. In 1968 the question was raised as to the feasibility of storing nuclear wastes in a cavern mined out of basalt at Hanford at a depth sufficient to isolate the nuclear wastes from the environment. At that time, the main issue was the isolation potential of basalts for nuclear waste. This question has many corollaries; the principal ones being how radionuclides might get into solution, and once in the solution what are the pathways and the rate of travel to the accessible environment. To answer these questions, initial studies were directed toward describing the geologic, hydrologic, and geochemical environment; the interactions of the waste with the host rock and the advantages and disadvantages of alternative waste product forms; and identifying the engineering requirements, including rock mechanics and systems engineering studies and analyses.

The results of the initial studies were published in the two-volume report entitled, "Preliminary Feasibility Study on Storage of Radioactive Wastes in Columbia River Basalts," published in November 1976. The preliminary studies revealed no detrimental findings that would preclude disposing of nuclear wastes in an underground disposal system engineered to utilize the unique geologic and geochemical properties of the Columbia River Flood Plateau basalts.

Much of the insight with respect to the geochemical behavior of nuclear waste product forms was discussed in 1972 at the International Atomic Energy Agency's symposium, Paris, France. Since then, much more detailed and comprehensive geochemical studies have been made. The results of these studies have demonstrated that basalts provide a unique chemical system that retards corrosion of metal containers. In the event of a container failure for any reason (even without a container) radionuclides, should they enter solution, are chemically bound in the rocks to such a degree that concentrations of long-lived hazardous radionuclides such as plutonium, americium, neptunium, cesium, and strontium, for example, are kept well below the release limit established by the EPA for a nuclear waste repository. It should be noted that the geochemical properties and protection afforded by basalt is unique to this type of rock or geological formation. I have appended to this testimony a summary of some of that work that's been done.

After 13 years of intensive and extensive geochemical, geologic, seismological, and hydrological studies, the conclusions have not changed. No technical issues have been identified that would preclude the safe storage of nuclear wastes in an engineered system in basalt rock at Hanford. It is time to proceed with the next step of in situ site characterization and demonstration.

Testimony provided by Dr. Raul Deju will address the appropriateness and adequacy of the provisions of this measure relating to schedules and site characterization issues. The remainder of my testimony will be directed to certain aspects of policy, conservation of resources, and State participation.

The proposed National Nuclear Waste Policy Act evidences extensive study of the issues at hand. While it may be presumptuous to request that clarifying amendments be made, I must offer them for consideration as factors that may have been overlooked. In some cases, the proposed amendments may obviate certain contentions.

In this regard I'd like to address the private versus Federal interim storage facilities. Title III, section 301(b) does clarify the intent that new spent storage fuel capacity can be provided at privately owned and operated storage facility. However, the question of interim storage facilities remains vague or appears to be the sole responsibility of the Federal Government. I propose that the issue be clarified to explicitly state that the private sector facilities be permitted to be used for extended storage and/or interim storage facilities pending reprocessing.

With respect to the conservation of energy resources, I assert that additional statements of findings and purpose are required to assure conservation of national resources. All fertile and fissile material inventories must be preserved to the greatest extent possible as valuable energy resources.

Paraphrasing Dr. M. King Hubbard from "Resources and Man," National Acadeny of Science, 1969, failure to utilize the total fuel value of uranium-238 would constitute one of the major disasters in human history. Spent fuels are resources of the future that are orders of magnitude more valuable than all the gold that has ever been in Fort Knox, and elements of these points should be included under titles I and II.

To support the policy of conserving energy resources, the findings in title I section 101 should include the acknowledgment that the useful nuclear supply will be multiplied by a factor of about 60 with the advent of breeder reactors. This valuable extension of our energy resources emphasizes the need for reprocessing and the attendant conservation of finite energy resources.

In this regard, section 401(a)(2) of title IV must be deleted as well as all other references to the disposal of spent fuel throughout title IV and elsewhere as appropriate in the act. I should hope that Congress would not condone nor be party to the Jimmy Carter syndrome evidenced in his desire to waste significant and valuable national energy resources by disposing of spent fuel. I have provided callouts for appropriate amendments and they're attached to this testimony.

With respect to State consultation and cooperation, the need for consultation and cooperation with States and Indian tribes has been recognized in the proposed act. There are several aspects noted to such interchanges that require clarification and guidance.

Contentions of a technical nature can be put to rest under the provisions of title III, especially at section 312(b)(1)(A) and title VII. However, contentions of a subjective political nature are not so the committee and the Senate may, in their wisdom, find it desirable to award targeted States and affected localities with a substantial remuneration for their supported efforts—for their supportive efforts. As an example, in the absence of the Federal Government payment of taxes to support the infrastructure attendant to the locating and operating of a facility in a State and/or locality, it would be wise to identify the costs in title III as part of the bill, including appropriate multipliers, and direct a portion of the fee established in title VI to that purpose. Such immediate costs would be addressed in section 303 and in title VII.

In addition, disposal sites must be viewed as a valuable natural resource. Once the space in the repository is consumed, it no longer

will exist. In this regard, a disposal site should be treated much the same as a mineral or petroleum resource with the host State receiving the equivalent of a royalty or a "separations tax." It is suggested that 1/10 of the fee identified in title VI be earmarked for this purpose. This would be in addition to the allowance required to ameliorate the economic impact on locality and State infrastructure.

This approach will provide strong incentives for States to compete for regional sites and should offset such rhetoric as, "Why should this State be a dumping ground for dangerous nuclear wastes?" Also, Congress should not consider this as an unusual windfall for a participating contributing State any more than they should consider a silver deposit or a petroleum field as strictly a national resource. Otherwise, why should the citizens of Alaska profit from the oil discovered at Prudhoe Bay? Careful consideration of these concerns should be evident in the National Nuclear Waste Policy Act of 1981.

In terms of cooperation with the State it should be noted that during the course of the basalt waste isolation project the Governor and the legislature of the State of Washington have been kept informed of these studies. Washington State Department of Natural Resources assisted in preparing geologic maps of the region. Most of the colleges and universities in the Northwest have participated in many of the geologic, hydrologic, seismic, and geochemical studies. In several cases, college and university students were able to complete advanced degrees by using specific field studies to satisfy masters and doctoral thesis requirements.

Under the auspices of the National Conference of State Legislatures, their science and technology program, a workshop on nuclear waste was held in Richland at the joint center for graduate studies. More than one-half of the State representatives and senators attended this meeting. A cooperative program has been in existence for 13 years. Unfortunately, because of the frequent turnover of administrations, such as every 4 years, we have found it difficult to keep a new administration informed of what has been done in the past, and perception to the fact that we're tracking too fast sometimes is very frustrating, especially in a State where we've been handling this job now for some 13 years and people say, "Let's go a little bit slower."

Mr. Chairman, that concludes my testimony. I will be pleased to respond to any questions that the committee might have.

[The attachments to Mr. Isaacson's statement follow:]

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GEOCHEMISTRY OF THE HANFORD BASALTS

The geochemical environment present in the Umtanum basalt geohydrologic system possesses several characteristics that make it an excellent medium for the disposal of nuclear waste. The most important characteristics are the reducing, slighly alkaline Eh-pH properties of the basalt-groundwater system that is associated with an abundance of metal oxides. These variables control the stability and solubility of solid phases in contact with the groundwater and the form of any reaction products that might evolve should groundwater invade the repository at any future time. For example, the basalt alkaline reducing environment is conducive to metal stability, thus greatly increasing the lifetime (corrosion resistance) of metal canister/overpack materials used to contain the nuclear waste (RHO-BWI-ST-15). In addition, an alkaline reducing environment favors the formation of insoluble actinides and transuranic oxides, and therefore effectively prevents their transport from the repository to the accessible environment. Based on the available data, the solubilities of uranium, neptunium, and plutonium in reducing conditions of the basalt geohydrologic system are sufficiently low to keep the release of these hazardous radionuclides well below the release limits established by the EPA for a nuclear waste repository (RHO-BWI-ST-7, 9, 10).

A second geochemical characteristic that makes the basalt geohydrologic system a good medium for the disposal of nuclear waste is exhibited in the sorptive capacity of the basalt for the radionuclides. Sorption of radionuclides onto geologic materials is one of the major

mechanisms for retarding the migration of hazardous radionuclides from the repository to the accessible environment. Basalts and their associated secondary minerals (clays, zeolites) have been shown to have a high sorptive capacity (retardation capability) for such hazardous radionuclides as cesium, strontium, radium, and americium. In fact, the available data indicate that sorption on basalt alone can keep the release of ^{137}Cs and ^{90}Sr below the release limits established by the EPA for a nuclear waste repository (RHO-BWI-LD-43, 48).

The high temperature interactions that can occur between the basalt, groundwater, and nuclear waste are favorable for a repository in basalt. The primary basalt minerals are found to be relatively stable (unreactive) under the expected repository temperature and pressure conditions. The more reactive groundmass of the basalt, however, has been found to be highly efficient in removing cesium and strontium from solution (RHO-BWI-TI-044). In addition, the basalt hydrothermal alteration products are high sorptive capacity minerals such as clays and zeolites. Based on the available data, hydrothermal alteration appears to increase the retardation capability of the basalts. Therefore, the basalts appear to be geochemically compatible with nuclear wastes in the thermal regime induced by the emplacement of nuclear waste.

In summary, from a geochemical standpoint, the alkaline reducing environment in existence in the Umtanum basalt horizon is very favorable for the long-term disposal of nuclear waste. This condition increases the stability of metal waste-form containers and decreases the solubilities

of many radionuclides to the point where acceptable release rates are achieved without a complex waste package - even without any waste package. In addition, the basalts are relatively stable under the imposed thermal regime and are capable of retarding the transport of many of the radionuclides to the accessible environment. These favorable aspects of basalt will permit the development of a simple, cost-effectively waste package for the repository.

The basis for the basalt geochemistry discussion may be found for the most part in the documents listed below. These references will be made available upon request.

RHO-BWI-ST-7: Engineered Barrier Development for a Nuclear Waste Repository Located in Basalt: An Integration of Current Knowledge, M. J. Smith and others. Rockwell Hanford Operations, Richland, Washington, May 1980.

RHO-BWI-ST-9: Identification of Key Radionuclides In a Nuclear Waste Repository in Basalt , G. S. Barney and B. J. Wood. Rockwell Hanford Operations, Richland, Washington, May 1980.

RHO-BWI-ST-10: Estimation of Waste Package Performance Requirements for a Nuclear Waste Repository in Basalt , B. J. Wood. Rockwell Hanford Operations, Richland, Washington, July 1980.

RHO-BWI-ST-15: Corrosion Tests of Canister and Overpack Materials in Simulated Basalt Groundwater , W. J. Anderson. Rockwell Hanford Operations, Richland, Washington, May 1981.

RHO-BWI-LD-43: Sorption of Selected Radionuclides in Secondary Minerals Associated with the Columbia River Basalts , P. F. Salter and others. Rockwell Hanford Operations, Richland, Washington, 1981.

RHO-BWI-LD-48: The Sorption Behavior of Selected Radionuclides on Columbia River Basalts , P. F. Salter and others. Rockwell Hanford Operations, Richland, Washington, 1981.

RHO-BWI-C-105: The Geochemcial Behavior of Supercalcine Waste Form: its Stability in a Basalt Environment, J. R. Holloway, D. M. Jenkins, and J. F. Kacoyannakis. Rockwell Hanford Operations, Richland, Washington, June 1981.

ATTACHMENT 2

The following amendments make the content of the act consistent with the findings cited in Title I as distinguished in Section 101 parts (e), (f) and (g) in that spent fuel should be stored and high-level radioactive wastes should be disposed of.

p. 7 line 7 after "storage" insert facilities for spent fuel

P. 7 line 9 | delete "and spent fuel"

p. 8 line 4 | delete "and spent fuel"

p. 9 line 3 delete "or spent nuclear fuel"

p. 9 line 9 delete "nuclear waste"

p. 9 line 10 delete "or"

p. 9 line 11 after "use" insert or

p. 9 line 11 delete "or disposal"

p. 9 line 13 after "storage" insert facility for spent fuel

p. 9 line 14 delete "or spent fuel"

p. 13 line 9 after "store" insert spent fuel

p. 13 line 10 delete "spent fuel or"

p. 14 line 7 delete "-" and insert language from line 8 beginning with "takes action..."

p. 14 line 8 delete "(1)"

p. 14 line 12 delete "or"

p. 14 line 13 delete "(2) disposes of such fuel in a repository;"

p. 25 line 5 delete "and spent fuel"

p. 25 line 11 delete "and spent fuel"

p. 25 line 13 delete "spent fuel, unless otherwise processed, and"

p. 25 line 19 delete "and spent fuel"

p. 25 line 24 delete "and spent fuel"

p. 26 line 7 delete "and"

p. 26 line 8 delete "spent fuel"

p. 26 line 15 delete "and spent fuel"

p. 26 line 23	delete "and spent fuel"
p. 26 line 24	delete "and spent fuel"
p. 27 line 10	delete "and spent"
p. 27 line 18	delete "and spent fuel"
p. 27 line 19	delete "and spent"
p. 27 line 20	delete "fuel"
p. 27 line 25	delete "and spent fuel"
p. 28 line 10	delete "and spent fuel"
p. 32 line 3	delete "and spent fuel"
p. 32 line 12	delete "and spent fuel"
p. 33 line 24	delete ", spent fuel,"
p. 36 line 8	delete "and spent fuel"
p. 36 line 10	delete "and spent fuel"
p. 36 line 24	delete "and"
p. 36 line 25	delete "spent fuel"
p. 36 line 25	insert or spent fuel as a stand-in;
p. 37 line 3	delete "and spent fuel"
p. 37 line 4	delete "and spent fuel"
p. 37 line 6	delete "and"
p. 37 line 7	delete "spent fuel"
p. 38 line 25	delete "and spent fuel"
p. 41 line 25	delete "such spent fuel or"
p. 44 line 17	after "age" insert of spent fuel and solidified high-level radioactive waste
p. 44 line 18	delete "and spent fuel"

Senator GORTON. Ray, thank you. That was fascinating testimony. Mr. Costello.

STATEMENT OF PAT COSTELLO, REPRESENTING HON. JOHN V. EVANS, GOVERNOR, STATE OF IDAHO

Mr. COSTELLO. Thank you, Senator. Senator Gorton, Representative Morrison, my name is Pat Costello. I'm legal counsel to Gov. John Evans of Idaho. The Governor is unable to be here due to a longstanding commitment to be in north Idaho today to attend to trying to salvage our silver mining industry in that area, but he did ask me to say how pleased he was to be given this opportunity to address the National Nuclear Waste Management Act of 1981 because the issue, as he sees it, is one of critical importance to the citizens of our State, as well as to his fellow Governors. Governor Evans is chairman of the National Governors' Association Nuclear Power Subcommittee, and on which he's privileged to serve with Governor Spellmen, so many of the views presented in his testimony reflect policy adopted by the National Governors' Association, and to the extent that they've already been expounded on by David, I will try not to be repetitive.

The Governor would like to commend you, Senator Gorton, as well as your committee chairman, Senator Stafford, and Senator Simpson and all of the members of the Environment and Public Works Committee, as well as Senator McClure and the Committee on Energy and Natural Resources for the effort that your two committees have put into developing Senate bill 1662. He was especially gratified that the two committees are working together jointly on this bill, which he feels demonstrates your commitment to achieving final action this year, and that that would be very gratifying to him and the other governors who have been active on this issue, because they've been pushing for comprehensive nuclear waste legislation for several years.

Our State, like the State of Washington, has played an important role in the development of nuclear technology. We feel, like the State of Washington, that we have a stake in the future of nuclear technology, but we recognize that there is a lack of public confidence in the ability to safely isolate highly radioactive wastes, and that lack of confidence is one of the greatest threats to the future of nuclear technology. It is time, then, to establish a national policy and program for the disposal of high-level waste, so that this confidence can be restored and nuclear technology can move forward.

One aspect of the bill that is before you that is of particular interest to the National Governors' Association is the State participation policy in title VII. Originally, as background, the NGA adopted a position about 4 years ago that States which are asked to host a major nuclear waste facility can have an absolute veto over that siting decision. In the meantime, we have moderated our stance somewhat in recognition of the fact that no one State should be allowed to unreasonably impede the national interest. However, we do continue to believe that federalism principles dictate that the States should be an equal partner with the Federal Government in the siting of a nuclear repository. To this end we have urged the

adoption of a consultation and concurrence process in lieu of an absolute State veto. The consultation and concurrence provisions in title VII very closely approximate the NGA position in this regard.

I would like to take advantage at this point to—of your invitation to depart from the testimony. One concern we had regarding the State participation provisions was that your definition of affected States is restricted solely to the host State involved. We feel that there may very well be States that have an interest in siting decisions beyond the host State itself. For example, here concerning the Hanford reservation, I'm sure that Oregon and Idaho would want to have some input and be kept up to speed on the plans for developing any kind of a facility here because of the transportation impacts on our States, which neighbor your State, so I would urge you to make some provision for other affected States beyond the host State, recognizing that the primary concern will be for the host State, and we aren't asking that the neighboring States have nearly the extensive concurrence rights that the host State would, but that they do be consulted and kept informed along the way.

The cooperative State-Federal agreements David has touched on and in that regard, we are on record as supporting negotiating these agreements. We would only point out that the legislation restricts States and DOE from entering into negotiations until after the decision to receive the site characterization. We feel that some States may wish to enter into negotiations prior to that point so that the process leading up to the decision to proceed with site characterization can also be subject to the orderly framework provided by the agreement. We would encourage you to give the States the option to start the negotiation process earlier, if they so choose.

We strongly endorse the concept of congressional review of State objections which you have provided. As David had mentioned, though, we would prefer strengthening the States' concurrence rights by shifting the burden of proof to the Department of Energy when Congress is asked to resolve State objections. We think that if the Department of Energy has carried out its program properly, that it should not be too onerous a burden for them to carry to get both Houses of Congress to override the States' objections, but the critical element, as we see it, is the fact that Congress is the forum to resolve the objections, and to the extent that that's the mechanism we've provided, we are very enthusiastic about title VII. But we would urge that you would also include the siting of AFR's away from reactor facilities in the same procedure that you have provided for the repository and for the monitored surface storage facilities. The Presidential override contained in title IV dealing with AFR's isn't viewed by the Governors as being adequate protection for the States' interests.

The Governors have taken the position that the primary focus of national nuclear waste policy should be on providing facilities for the permanent disposal of high-level waste and spent fuel, and we recognize that some interim measures are necessary to store these pending the availability of a repository, but that providing these temporary facilities should not become the de facto solution by diverting our attention and resources from pursuing a permanent repository to demonstrate to the public that these wastes can confidently be isolated

from the biosphere indefinitely. We believe that this philosophy is reflected in section 501 of the bill before you, and we urge you not to retreat from this subordination of retrievable storage to the establishment of a permanent repository.

In this same vein, support the concept of a congressionally mandated timetable for the establishment of a repository, as provided in this bill. But while the rigorous chronology is advisable, the Governors insist that it not be at the expense of technical conservatism required for a successful program. I think we share some of the concerns that Mr. Stevens has already imparted to you regarding the phasing of the timetable in this bill. I think it's important to keep in mind that failures in other nuclear waste facilities have created an unfortunate legacy of mistrust in the public, and the schedule for site selection must allow for thorough investigation of each candidate site in order to avoid another such failure. We fear that the timeframe set out in Senate bill 1662 may compel the Department to select those sites, such as which have already received extensive study, whether or not they're the most promising sites on a national scale. We know that the bill provides for a national screening process, but that that will not take place until after the first repository is chosen and we felt that it would be beneficial to the selection of the first site if you received some results of that national screening process before you proceeded with the siting of the first repository.

I'd also like to call your attention to the issue of impact assistance. Quantifiable fiscal impacts on a community and State due to the construction of a repository should be compensated. The cooperative agreements provided in title VII could provide for this assistance, and we would support authorization of such compensation from the fund established under title VI as part of the full cost of the facility meant to be covered by the user fee, and we do want to commend you on establishing that user fee, which we thought was a very creative approach to internalizing the costs of nuclear waste disposal, which I think is something we all agree should be done.

I would also like to associate myself with Governor Spellman's remarks on defense wastes, and we don't feel like defense wastes should be ignored since they do, in fact, account for the vast majority of high-level waste at this point.

Last year, we worked diligently with the Congress toward passage of the National Low-Level Waste Policy Act. As you've already heard, States are making excellent progress, especially in this part of the country, toward carrying out the policy established under that act. I think that the States' response to this challenge presented by the National Low-Level Waste Policy Act indicates that they are ready to be constructive and responsible partners with the Federal Government in resolving nuclear waste management issues, and we heartily concur with the finding contained in your bill where it states,

> . . . a successful nuclear waste management strategy requires the full participation of State and local officials, Indian representatives and the public in a step-by-step, technically sound program to promote public confidence in the safe disposal of nuclear waste . . .

We want to commend you and the authors of this bill for the recognition of the strong and constructive roles of the State governments should play in this process.

Thank you very much, and I'd be happy to respond to questions.

Senator GORTON. Thank you. Do you believe the bill includes a sufficient commitment to a second repository to assure that there will be such a repository, or should that process be stronger? Should it include a statutory schedule for its development?

Mr. COSTELLO. I could respond to that, and I'd like to preface it by saying the National Governors' Association doesn't have a policy on this, so I'm speaking on behalf of Idaho now, rather than the Governors' Association. We feel that there should be a reasonable system, and there should be a stronger commitment, as David suggested, to a second and subsequent repositories. I think that having that commitment spelled out will go a long way toward alleviating the concern in the first host State about accepting the repository, if it can be demonstrated that ultimately there will be a regional repository rather than a national high-level waste repository.

Senator GORTON. Ray, do you feel there ought to be one at all?

Mr. ISAACSON. I would like to respond to that, too, but perhaps in a little different way. I believe that it's urgent that we get the first site moving. I think that we've gone too long, as I've already said, but on the other hand, too, we do not need to have a lot of space to store the initial wastes that are being generated, and then the question in my mind comes as—and I'm speaking as I view it myself and not for the legislature and not for Rockwell or anybody else, but rather as Ray Isaacson views it, and I would say this—that the Congress should be careful in not making excessive commitments to expenditure of literally large sums of money for a multiplicity of repositories when in reality they wouldn't be required from a volume standpoint.

On the other hand, I do believe that you should address, and I believe you have addressed the fact that we should have two to three sites identified, but the emphasis is to get the first one moving, to demonstrate the technology to put the country at ease that we have the technology and we have the ability, and I think that is of paramount importance to the question of whether or not we should have a multiplicity of sites.

Senator GORTON. David, do you want to say anything more on the subject?

Mr. STEVENS. I think probably those two responses have been good. I think you have what we initially said, unless there's some aspect you wish me to pursue?

Senator GORTON. Now, let's follow up on that same thing. S. 1662 does have a requirement for a site survey program to be completed by 1986. Do you support the proposition that no State with potential repository sites should be able to refuse to participate in that program?

Mr. COSTELLO. I do. Mr. Evans has publicly taken that position before the State planning council.

Senator GORTON. David?

Mr. STEVENS. I think there's a State responsibility to look at this as a part of their share of concern with the national issues, and that each State should be included in that sort of a survey, but let me amplify that just one moment by saying that the timing of that survey would lead us to indicate that perhaps we've not done enough advance work in the isolation of even the first site. So I would concur with Mr. Costello's concern that we may need to establish a broader program

and earlier on, before we get to a final conclusion as to a site designation.

Mr. MORRISON. Senator Gorton, if you'd yield on that point. Do I understand, then, from the two States that are represented here, that, at the Federal level, we would identify the State of Washington and, say we want to site a facility here for a long-term storage of high-level nuclear wastes, then would you want to have the authority to turn that over to your siting councils for an actual decision on the location?

Mr. STEVENS. I would anticipate that that would be a part of fulfilling our responsibility under State law.

Mr. MORRISON. Pat, do you have any response to that?

Mr. COSTELLO. Many States, Idaho is unfortunately one of them, don't have siting councils. I'm not sure how many are like Washington have them. I'm sure they should be consulted on it, but I think it's probably reasonable to expect the Department of Energy to nominate a site, keeping in mind that they will be consulting with State governments on it and not doing it unilaterally.

Mr. MORRISON. I'm sure that they will be nominating a site. In fact, I would like to investigate, since we have the views of the States represented here, this Federal-State relationship on this whole issue. Dave, what mechanisms are in place? Obviously one State represented here has a siting council that is a one-stop concept to get all the State agencies supposedly in one room. Do you want to be involved in questions revolving around safety, or costs, or the contribution of the Federal Government to the local community? What do you see as the range of State involvement in the siting of nuclear waste facilities?

Mr. STEVENS. Representative Morrison, if we look at our existing responsibilities it's heavily in the environmental area, and certainly in the certification of the energy facilities to date. The siting council has taken strong cognizance and has written into certain agreements mitigating requirements for an applicant so that they meet the problems occasioned by a facility and the impact on a particular community. We don't have in place any authority for the State as a part of the siting process to deal with this issue. That would be an issue that the legislature and Mr. Isaacson would have some influence on.

Mr. MORRISON. Now, by mitigation, let's investigate that for a minute. Would that include making an addition to the firehouse here in Richland along George Washington Way because we would have an additional number of workers being housed in the community? How far do we go with this? Is that an appropriate question?

Mr. STEVENS. Well, I think it's an appropriate question. I think it's, in part, been determined by the impact on the particular community as to how it's going to be adversely affected, and what kind of things need to be done to make it whole. I guess in the area of transportation, public safety, public facility is one kind; help to educational institutions if they're impacted by heavy labor influx of construction workers; any one of a myriad kind of thing that might be occasioned by the project.

Mr. MORRISON. Would you see a greater involvement of the States' role in this negotiated agreement with the Federal Government over siting than in this area of environmental mitigation, social concerns, and the impact on local communities than you would over

nuclear safety or the costs of perpetually caring for this particular depository?

Mr. STEVENS. That's an interesting question. I think there would be an emphasis on the identifiable environmental impacts, broadly defined. I think that it is unlike some things pertaining to an electrical powerplant which must have a certification from our utility commission in terms of the rates where utilities are covered by our State law. That would then begin to take into the fact some later-on costs, for example, decommissioning. In this kind of a context I'm not sure, but it would depend upon what the policy of the legislature would be, but just extending what the existing process would be would be heavily environmental in nature.

Mr. MORRISON. OK, Pat, any views from Idaho in that regard?

Mr. COSTELLO. I think socio-economic costs might also include things such as inverse condemnation, should there be a diminution in the overall property values in the local community

Mr. MORRISON. Representative Isaacson suggested, what I call the antiseverance tax; that is, the reverse of the depletion of a natural resource, as has now been proved by the courts. Would you see that as the mechanism to provide ongoing remuneration to a community that was impacted and Ray, maybe you can tell from my line of questioning I feel very strongly about a measurement of the social impact; that is if, in fact, we're going to become a site for someone else's problem, that there should be a penalty to the States that refuse it and a reward to the States and local areas that accept it.

Mr. COSTELLO. Yes, Congressman Morrison we would strongly agree with you, and I thought that the reverse severance tax approach seemed very appropriate to this end or you can do it as a surcharge. There's going to be a fee system set up to charge the utilities for storing the fuel. It can either be based on a charge per unit of high-level waste or spent fuel, or you can do as it is done in this bill, one-tenth of a mil per kolowatt hour. In either event I think a portion of whatever that fee is should be dedicated to local governments and possibly State governments, just as South Carolina does with their low-level waste site. That a portion of the cubic-foot charge on the waste goes to the city of Barnwell and the State of South Carolina.

Mr. MORRISON. One last question. Thank you. Ray, I think that coincides with the comments included in your statement.

Mr. ISAACSON. Fairly well parallels it, yes.

Mr. MORRISON. You've indicated that the Governors have backed away from the absolute right of the State to veto the location of a site within your States but you want to be equal partners with consultation and concurrence. Do you see within this bill, with a few modifications you've indicated, the appropriate mechanism to achieve that consultation and concurrence?

Mr. COSTELLO. Yes, Congressman Morrison when we say the Governors have backed away from it, I should caution that it's not unanimously held. It was held by a sufficient number of Governors to adopt the policy, which I believe is two-thirds of the Governors. I can think of a few that still advocate an absolute State veto. The overriding concern we have is that Congress be the forum to resolve the objections raised by the potential host State, and that is provided for in this bill. We would like to see it go further and provide requiring

DOE to obtain a two-house override, but you have, I believe achieved a reasonable approximation of what we had in mind when we developed the consultation and concurrence policy.

Mr. MORRISON. Dave, do you want to add to that at all?

Mr. STEVENS. No, I think Pat's covered it very well.

Mr. MORRISON. Thank you Mr. Chairman.

Senator GORTON. Thank you, Sid, and I should like to thank the panel for its interesting and enlightening testimony. We appreciate you being with us this afternoon.

At this point in the hearing we have reserved the first of two sets of times for general public comment. We'll ask those of you who come from some distance from Richland to testify now, and those of you who are local to testify after some of the other invited witnesses, so if Mr. O'Brien, Mr. Parents, Mr. Andrews, Miss Beadle, and Miss Falier would come up. We're going to ask you to speak from the microphone right here in front of us in that order, starting with Michael O'Brien; and for each we will permit 5 minutes.

You're Mike O'Brien?

Mr. O'BRIEN. Yes.

Senator GORTON. OK, if you'll use that microphone, it will help you with what you have to say.

STATEMENT OF MICHAEL O'BRIEN, CERTIFIED HEALTH PHYSICIST, UNIVERSITY OF WASHINGTON

Mr. O'BRIEN. Senator Gorton and Representative Morrison, thank you for the opportunity to speak to you this morning. My name is Michael O'Brien. I'm a certified health physicist, and I'm employed by the University of Washington as their radiation safety officer. I'm coming to you today as a private citizen from the State of Washington representing my own views. I wish to comment on the general attitudes in the country, and especially in the State that have carried us to the point where we need a law such as S. 1662.

The unresolved issues of high-level waste disposal have provided the nuclear critics with a rather solid argument against further development of nuclear power. States have proposals and laws against further development of this issue until this issue is resolved. Because it is—because it is an issue that the public seems to understand, the nuclear critics can't allow this to be resolved. It is the high point of their—of their defense against reactors and critics—the critics' final and most convincing argument is, "How can we really know? How can future generations really know that they will be safe?" There is really no answer to this argument until that time comes.

I believe the technical issues of high-level waste management and disposal have been solved in general with several options, but the total issue remains stranded in the public—in the political arena of indecision. For 20 years the Federal position on high-level waste has stood as a starving donkey between bales of hay, not able to decide which one to eat. The options remain essentially untasted, and the work available from the nuclear donkey is now in serious jeopardy. A decision is necessary. This bill provides for that decision.

The importance of this hearing here in Richland should be most obvious, although unstated. One of the most attractive sites for the deposition is in the basalt formation in this region. We are likely to get all the marbles. You will hear from the State nuclear critics that the people of this State do not want radioactive waste. A vote on Initiative 383 was passed 3 to 1 against deposit of radioactive wastes in this State. I actively opposed Initiative 383 and spoke to a number of civic groups in that opposition. I had an opportunity to listen to many of the average citizens of the State of Washington, and I would like to convey some of the—some of my impressions of their attitudes.

First, there is a deep-seated fear of radiation among the average citizens. They don't understand it, and they have no perception whatsoever of the related risks, but they do know that it ain't good for them and they don't want to get close to it. Second, there is very little benefit felt by the citizens of this State from nuclear power, so why accept nuclear waste? And third, the people of this State love and cherish the natural beauty and recreational opportunities of the Evergreen State; anything that might jeopardize that should be stopped. These are the general feelings, I think, of the citizens of the State of Washington.

The Don't Waste Washington Committee that promoted 383 played these attitudes like a fine fiddle. Even with a law that was obviously unconstitutional, the 3 to 1 vote was based on medieval fairy tale logic prevailed by the people that promoted 383, and it passed. It is important that this committee know that the people of the State did not understand the issues of 383. They rose against an apparent threat to our beautiful State. They were duped to believe that threat existed.

The second point of the citizens' attitude is probably the most important in the consideration of this bill. What is the benefit to the State of Washington? Anyone can understand the term "waste." It has no value; why should they take it? I feel that there are two answers to this question. First, the State of Washington is part of the national economy. We benefit from the steel and chemical plants in the Eastern States, and let's hope they stay in those States. We benefit from the production of pesticides and fertilizers; we benefit from the sale of airplanes produced by a relatively clean industry that is sold to other parts of the country. We benefit from national defense and trade policies that we could not sustain as a people separate from the rest of the Nation. These benefits are taken for granted by most of us, and we are perfectly happy to allow the environmental detriment from these other programs to fall in other parts of the country.

We are spoiled in this State for another reason. The foresight of the early people in the Northwest provided us with a wonderful supply of hydroelectric energy. The only group to suffer were the Indians, who lost fish runs and reservation land behind dams, but the average citizen feels that he has the right to this cheap energy. We did not stop and think that it was national tax dollars that paid for these dams. We derive a tremendous benefit from the investment of others, and their return is virtually nil.

The second part of the value of considering the value of waste is that this State has to establish the terms of the geological deposit in this State as being a natural resource. There is indeed very few locations in the country that have sufficient geological protection to allow long-term deposition of high-level radioactive material. The people of this State must understand that in the same way the people of Texas and Oklahoma understand the value of their natural resources. The natural resource must return some value to the State. This can occur in the form of royalties for deposit of materials, with funds going into the State treasury. These points have been already addressed this afternoon. Only then will waste have value to the local population.

In summary, I feel that a bill of this sort is needed, and urgently before the nuclear industry dies. The people of this State oppose nuclear waste because they don't understand the hazards, they see no value in the waste, and they want to protect their beautiful State. The people of this State must understand the role of the State in the national economy, and benefit from the natural resource that we have; and the people of this State must think of Gable Mountain as a rare and valuable natural resource, and they must see that they are receiving a value from this resource. Thank you.

Senator GORTON. Thank you.

Mr. MORRISON. Senator Gorton, one question. You mentioned that you'd be delighted to have some of those States in other parts of the country keep their steel mills, etc., and I suppose you're alluding to the acid rain and the other pollution problems that have paralleled those industries?

Mr. O'BRIEN. Yes. I'm not a native of this State, unfortunately. I lived in several parts of the east coast, including Pittsburgh, and I'm well aware of the environmental detriment of producing steel.

Mr. MORRISON. Then with your professional role with the University of Washington, I'm presuming that your spinoff is that, in fact, from the proper handling of high-level nuclear waste in this State there would be no detrimental environmental impact?

Mr. O'BRIEN. I feel that the technical issues are sufficiently resolved in the handling of high-level waste; that there would indeed be no environmental impact in the handling of high-level waste in this State. I am not an expert in this area, but I do understand the technical aspects of the hazards and the risks of radioactive material.

Mr. MORRISON. Thank you. Just a last comment here. Your mentioning of the starving donkey between the two bales of hay—I just would like to mention that the starving donkey has been replaced.

Senator GORTON. Ed Parents? Is Mr. Ed Parents here?

Please identify yourself your address and background.

STATEMENT OF ED PARENTS

Mr. PARENTS. Senator, my name is Ed Parents; I'm from Spokane; I'm here representing myself as a private citizen. I really want to thank you and Representative Morrison for having these hearings here, and particularly on a holiday weekend like this. Happy trick or treat, by the way. Happy Holloween.

I came here to address 1662 with three very basic concerns. First of all, the time line that's outlined pushing things a little bit. It leaves us almost 10 years ahead of the orignial deal we scheduled for finding a way to deal with nuclear waste. One of the sidelights that I think is that it could leave us locked into a program that doesn't work as well as perhaps some other options that may come up farther down the road. One of the representatives on the Governors' panel talked about the technical conservatism that they would prefer to see and that they were happy to perceive in the waste disposal discussions that are going on at this point. I'd like to stress that that technical conservatism is a good thing, and I think that going into the time line that's in this bill overlooks the technical conservatism that could lead to further safeguards down the road and could lead to perhaps a better solution than those that have been proposed to date.

My second concern is that there's language in the bill which seems to give the Secretary of the Department of Energy, for however long that Department may last, very broad scope in deciding what sort of assistance is to be given, what sort of impetus is to be given to finding the solutions for the disposal of high-level wastes. I think that language should be reviewed very, very carefully, particularly by a fiscal conservative government, because to me the language in the first parts of the bill leaves the door wide open for the Energy Department to provide untold amounts of taxpayer money into finding a national repository for essentially a civilian problem. The bill addresses primarily the issue of disposal of civilian waste, and if it's a civilian problem, then perhaps the industries themselves should meet the bill for it.

My third concern is that the existing record of nuclear waste disposal even in this State, as the Senator is well aware, has not been good. There have been cases of leaks, massive in scale at some times, minor at other times. I'm sure Representative Morrison has been closer to the problem than any of us. The available solutions to date have not proved to be the most effective ones. I feel that the 10-year time line that is laid in here, or the time line that leads us to having a respository defined and in place by 1988 does not allow for the technical conservatism that is so necessary to resolving the issue to the satisfaction of everyone concerned. I think it is everybody's issue, regardless of which side they come down on.

Thank you, Senator.

Senator GORTON. Sid?

Mr. MORRISON. I'm interested in your background, and you've obviously read the bill?

Mr. PARENTS. Yes, I have, as a matter of fact. I've read the bill; I've read surrounding documents from the Union of Concerned Scientists; also an overview and analysis that was prepared in somebody's office back in Washington D.C. I have been a citizen advocate in the field of energy for a long time. It's just been something that I do.

Mr. MORRISON. Senator Gorton asked a question earlier of the first panel about mandating a second repository, which ties into your concern about the time line. Do you have feelings about that? One of the questions is how quickly to proceed with one particular

geological area, as we have here with basalt, and running the risk, then, of having others say, "Oh, that looks so good we're not going to do anything." Is that part of your time line.

Mr. PARENTS. That's part of my time line concerns. I think I would like to see language specifically mandating a second site for this reason: If there is a development of new technology which eliminates the use of the one site that is mandated by law since 1983, we have to have the site chosen by 1988; we have to have it fully developed and operational. A second site gives you an alternative. If you have to live with this bill, a second site at least gives you some place else to go with the waste.

Senator GORTON. Would you do that simply on a mandate basis or by providing a maximum amount of waste which site No. 1 would be permitted to take?

Mr. PARENTS. I'm afraid that's more technical than I can answer, Senator. I would not know.

Mr. MORRISON. No, that's fine.

Senator GORTON. Thank you very much. We appreciate your appearing.

Scott Andrews will be our next witness.

STATEMENT OF SCOTT ANDREWS

Mr. ANDREWS. Senator Gorton, Representative Morrison, thanks again for having these hearings up here. My name is Scott Andrews; I'm just representing myself. I'm a concerned citizen from the town of Cheney. It's right up near Spokane. I'm very concerned with S. 1662, because I believe it seeks a quick and convenient solution, instead of a good or safe one. I think the bill in many ways is designed so that Hanford will become the one and only high-level repository. I have two basic arguments that I'd like to raise. One is the issue of States' rights, and the other is in the transportation of nuclear waste.

First of all, I think it's ironic that at the time when many in government are talking about getting the government off people's backs, including some of the proponents of this bill, there is yet another attempt to ignore the will of the people and force something down the throats of an unwilling public. Initiative 383 to ban out-of-State nuclear waste passed in Washington by 75 percent, and I really don't think it was any more misunderstood than any other initiative that ever came up. The people of the State clearly don't want to be the nuclear waste dump of this Nation.

In the area of transportation of nuclear waste, I think Washington is to receive all initial nuclear waste. It's going to have to be transported through our State, as well as surrounding States, and I think that any time you raise the amount of waste that's being transported, you, of course, raise the likelihood of accidents during that transportation. A lot of this waste will come through the Spokane area, which is a concern of mine. It's personal since I live there, and I think even myself or the people of Washington shouldn't be exposed to that danger simply because other States and regions don't want to have the waste in their own backyards. Thank you.

Mr. MORRISON. Scott, just one question. Just to assure you from my own point of view that in no way should Hanford become the

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one and only, so I would like to be part of whatever happens, at least in the U.S. House, of seeing that, in fact, there is mandated in some way, shape, or form sufficient restrictions and guidelines so that we do not end up taking more than what might be our share of whatever that might well be.

Senator GORTON. We'll take more than our share, you can bet on that.

Mr. MORRISON. On a regional basis, perhaps not. I guess, as a State we may well be in that position. So I think if you have any ideas of mechanisms that we should utilize in the bill for assuring that other areas are involved——

Mr. ANDREWS. No specific mechanisms, other than the basic idea that a more regional approach would be better. I think there are a lot of problems other than nuclear waste itself in the nuclear industry, and I think this is just one more thing that adds to people saying, "Well, we can dump the waste off somewhere else, so let's not worry about it." I think that obviously in this State, we are seeing a lot of other problems with the nuclear industry. I think it adds up to a huge subsidy by the Government. There's a 30-year history of huge subsidy by the Government of the nuclear industry and I think it's fairly obvious what your life cycle's costing, including everything from building a plant to decommissioning costs, which the GAO report, I believe, said it could be anywhere from State approximation of double debt to 2½ times the original construction costs, and you start adding in things like how much it is going to deal with the waste on a long-term basis? I see this as just one more thing of making it in nuclear be supported in many ways, when there are other, better ways of getting our energy.

Mr. MORRISON. So your feeling is that however we would handle nuclear waste, that there should be an appropriate charge with it so, in fact, your electric bill would reflect the total cost of nuclear power generation?

Mr. ANDREWS. Yes.

Mr. MORRISON. That's entirely fair.

Senator GORTON. I think we all believe that that is the case. The previous witness testified to that proposition, and we didn't question him on it. The cost of nuclear power ought to reflect all of its costs; right?

Mr. ANDREWS. Yes.

Senator GORTON. Thank you very much.

Mr. ANDREWS. Thank you.

Senator GORTON. Deborah Beadle?

Would you state your name and address?

STATEMENT OF DEBORAH BEADLE

Ms. BEADLE. Yes. My name is Deborah Beadle; I'm a concerned citizen.

Mr. MORRISON. From Yakima?

Ms. BEADLE. From Yakima, Wash. My concerns reflect directly on the gentleman's in front of me, but I would also like to stress the reasonable solution of perhaps maybe an eastern geological disposal site, a midwest, a western, rather than maybe Idaho and Washington. I believe one of the gentlemen that spoke on the panel suggested a

permanent geological disposal site, as well as being able to retrieve what we can out of the waste. I also think that finances, as someone else mentioned, should be of no concern. I feel that we should do it well and protect ourselves, because we're spending a whole lot of money going out in space and doodling around out there. I feel like, we can take care of the mess we've made here, an we can use it well and protect ourselves at the same time from any bad things happening.

I also request a geologically safe area. I'm sure anyone who suggested a region to make a deposit site out of, I would make sure of that, and frankly, I despair that we're even having to deal with this issue. I'm opposed to nuclear weapons and to nuclear power. That's all.

Mr. MORRISON. Deborah, I've had the chance to speak with you before.

Ms. BEADLE. That's right.

Mr. MORRISON. But on this, I just want to assure you that in your question about permanent versus retrievable, that certainly is what I had in mind and the work that I've seen done here is one of finding a permanent answer, but still keeping these materials in a retrievable form, because there's a wealth of natural resources tied together with our technical abilities and the cost of retrieving them just isn't within our grasp at this point. So when we talk about retrievable, it doesn't mean they're going to be out here on the surface; but they're easily retrievable but would be protected so that, in fact, if we never needed them again, that they would be safe forever.

That's the approach that I've seen in the work that's been done here at Hanford.

Senator GORTON. Thank you very, very much.

The last witness in this group is Nancy Faller.

STATEMENT OF NANCY FALLER

Ms. FALLER. I'd like to thank you, too, for having a hearing and giving us this opportunity to give our opinions and our concerns.

My name is Nancy Faller; I'm from Yakima and I'm a friend of Deborah Beadle. I'll be brief. I haven't had a chance to read the bill, so I'm being presumptuous possibly in speaking at all, so I'll be brief because of that, and because I think some of my concerns have been expressed and I know that there are people here to give better technical testimony than I could, and because as seems to happen at these things, Mr. O'Brien has already given you a complete idea of how the people he doesn't agree with feel.

I've had experience talking to citizens, too. I worked on 383 and and did a precinct that was pretty much a mixture, as far as people probably who don't vote Democrat/Republican, and it—because of the layover, a pretty wide economic cross-section, too. It's the neighborhood, Mr. Morrison, that Lenore Amber lives in. I found it 100 percent behind 383. I'd like to suggest that the same people who were naive enough to be duped to go out voting for it were the same ones that put you gentlemen in office that same night.

Mr. MORRISON. You warmed them up?

Ms. FALLER. I think that one of the things that surprised me today was not to hear that mentioned from the podium. A 75-percent vote simply cannot be explained by fears, ignorance. A few years ago, Washburg University had quite a thorough study, if you remember,

on the possibility of a repository here standing out someplace like Gable Mountain on the basalt, and that there still is a great deal of question about it.

I don't like to get into the personalities and the emotional versus the scientific point of view when we're at these discussions, but those of us who have these concerns are getting our information from scientists, too. We're getting them from organizations like Physicians for Concerned—the physicians group that has become so active; the Atomic Scientists Bulletin, they put out the Bulletin of Atomic Scientists; all kinds of informed people who we're getting our information from, and I think that those concerns are growing and that it is informed. So that I just want to say that I hope you are not going to ignore the message that was sent to you on election night when that many people voted to keep this a repository for nuclear waste of this State and of the region. I mean, we accept the responsibility of that. What we're concerned about is the transportation and being a dumping ground for the rest of the Nation, and I am terribly concerned that that doesn't seem to be being addressed here, except by people in the audience.

There is a suit involved. There are criticisms that perhaps the State isn't pursuing it with enough conviction, perhaps, but there is a suit involved. It has not been declared unconstitutional yet, except in summary judgment, and I just hope you keep that in mind, and just add that I certainly think that the regional approach would be the one that should be considered at once.

Senator GORTON. I think it's important for you to understand, and for other people to understand that the attitudes which Congressman Morrison and I express are not necessarily going to represent the attitudes of a majority of the Members of the two Houses of Congress. We're here so that we can reflect the opinions and the views of the people of the State of Washington.

Ms. FALLER. I hope so.

Senator GORTON. But we have to say very, very bluntly that lots of people, lots of Congressmen and Senators from other parts of the country look on this as a God-given opportunity——

Ms. FALLER. I realize that.

Senator GORTON [continuing]. To solve their problems somewhere else. So the comments we seek on 1662 and any similar proposition are how can we influence others.

We hope that when we get the thoughtful concerns of the people of this State and try to see to it that a regional approach is adopted, that some responsible approach is adopted, that it will be in the interests of the entire country.

Ms. FALLER. Well, it occurred to me that the Washburg conclusion was that the real reason that Hanford's considered attractive is because it's politically feasible here; that there isn't a great deal of objection in this area or in the State of Washington, and I think that 383 should have changed that thinking and if it comes to mind to be certain as to representing the field, then you might want to give us another opportunity to vote on this and see to it that we're well informed. Thank you—or did you have——

Mr. MORRISON. Just one question. Since 383, have you followed the actions of the legislature in the State compacts?

Ms. FALLER. Yes.

Mr. MORRISON. They've taken sort of a regional approach.

Ms. FALLER. Yes; that was provided for in 383. I'm glad that 383, the way it was drafted indicated that we did recognize the responsibility for waste and for the fact that we didn't have a repository here.

Mr. MORRISON. If 1622, or whatever Federal vehicle ends up being utilized for high-level waste—if it also built in some of the requirements that you heard mentioned from the State government panel, who presented their views first, so that it was a regional approach with strong State and local involvement in the dicisionmaking of the location and the long-term aspects, as well as social and environmental concerns; would that ease your mind somewhat?

Ms. FALLER. I say, I haven't read the bill, but my understanding is that any State objections can be overridden, either by the President or by one House of Congress; is that true?

Mr. MORRISON. That's true.

Ms. FALLER. I would particularly want to register my objection to that part, until I have had an opportunity to read it. I can't comment any further.

Senator GORTON. Perhaps that's a good point to terminate this panel, but we should say to you and to the balance of the audience here that we will accept written statements to supplement your testimony. However, because of the constraint that we're under under the rules, we must report the bill by the——

Ms. FALLER. I mean I'm concerned about this time thing, quite appalled——

Senator GORTON [continuing]. By the 20th of November. We must have those written comments at the Environment and Public Works Committee of the U.S. Senate in Washington, D.C., by this Friday.

Ms. FALLER. By this Friday?

Senator GORTON. By this Friday in order that they be a part of the record.

Ms. FALLER. I hope you'll find some way to slow this down.

Senator GORTON. The House will have much more time on it, but for this committee report that, unfortunately, is the deadline which the chairman——

Ms. FALLER. It has to be there by Friday?

Senator GORTON. It has to be there by Friday.

Mr. MORRISON. Take it to my Yakima office, if you would.

Ms. FALLER. Oh, thank you.

Mr. MORRISON. We have very good mail service. It's faster than the normal——

Ms. FALLER. Can we use that for anything, or just——

Mr. MORRISON. It depends on the weight of the package.

Senator GORTON. Our next panel will consist of Ruth Weiner and Michael Gendler. Will the two of you come up to the table.

Ms. Wiener, you may proceed.

STATEMENT OF RUTH WEINER, PROFESSOR, ENVIRONMENTAL STUDIES, WESTERN WASHINGTON UNIVERSITY

Ms. WEINER. First of all I'd like to thank you, Senator Gorton and Representative Morrison, for having this hearing in Washington State in Richland and giving us the opportunity to testify. My name is Ruth Weiner; I'm a professor of environmental studies at Western

Washington University. I have a Ph. D. in chemistry. I've been teaching chemistry and environmental studies for 22 years; also have taught nuclear chemistry at one time.

I am not representing any organization; however, as the author and chief architect of Initiative 383—the Radioactive Waste Transportation and Storage Act of 1980—I suppose that in a way I represent the people who voted for it. I would like to submit a copy of the initiative which is now an act, although it's held up in court, for your information.

The initiative received about 1,211,000 votes; it clearly represents the desires of the people of the State.

I'm not here to testify that we have to stop storing out-of-State wastes at Hanford no matter what. We hoped to achieve the following with Initiative 383:

First, Federal and State cooperation in siting with consideration of the people who live near the potential leaks.

Second, honesty on the part of the Department of Energy and the NRC about the state of the art in waste storage and the suitabilty of sites and an end to the wishful thinking attitude toward radioactive wastes which has prevailed for 35 years; we hoped that there would be Federal recognition that these substances pose environmental and public health hazards.

Third, serious Federal investigation of several sites, not one site, for interim and/or permanent storage of high-level wastes.

Fourth, consistent, intelligible, unambiguous definitions of such terms as "high-level wastes, low-level wastes storage" et cetera.

Fifth, above all, an honest approach to the problems of long-term waste storage and a recognition that there are limits to our knowledge and predictive abilities. The best that we will ever be able to do with radioactive waste is to reduce the potential hazard to a level indistinguishable from the thousands of other environmental hazards we face.

I would like to applaud the effort made in drafting Senate bill 1662; it is a giant step toward adequate address of the problem. In some ways Senate bill 1662 speaks to our concerns, but in many ways it does not. I will thus comment on the bill section by section.

First of all, the term "radioactive waste" should be substituted for the term "nuclear waste" throughout. "Radioactive waste" is a precise and technical—technically meaningful term; "nuclear waste" is neither.

In title I, the references to nuclear energy in sections 101 (d), (i), (k), (1), (m), and (o) still reflects the wishful thinking which has prevailed for 30 years. What does "significant" mean? Does significant percentage mean 12 percent, 25 percent, 2 percent? We still don't know. Section 101(d)(2) must be restated. How could Congress find that nuclear power ever offers "site-specific advantages in environmental impact, cost and fuel availability"? It might in fuel availability; the second cost, never—and we have some lovely examples in this State; the first environmental impact, almost never. We may develop nuclear power generation to add to the energy mix, and I'm not saying we should not do that, but let's not claim advantages for it that it clearly does not have. My own position is that the waste from existing plants, if they continue to operate, will be more than enough for us to handle.

Section 101(i) is incorrect: the technology does not exist which "would provide reasonable assurance that spent fuel and high-level radioactive waste can be safely disposed of." I would suggest a more conservative statement which might be true; that is, "methods and techniques under investigation indicate the possibility of isolation of spent fuel and high-level radioactive wastes from the environment for up to 600 years."

Section 101(k) is too vague. I would suggest deleting the words "adversely affect the public health and safety of this and future generations," and substituting" become dispersed in the air, land, and water environments, or become concentrated biologically, or become entrained in the human food chain." I'm not suggesting that we not protect public health, just that that's vague wording. Maybe we would care to add the additional wording about dispersal; that's really what our concern is.

Section 101(1), add "in cooperation with State and local governments."

Regarding section 101(m): Congress may have "confidence in the ability of the Federal Government" and so on, but most people certainly do not. Now, it's been testified to here that Initiative 383 was, as much as anything, due to lack of confidence in the AEC and its successors. The credibility of the Federal agencies has been shattered by the repeated dissembling we have been subjected to. I would just suggest deleting this section, then retain subsection (n); it makes little difference anyway.

Section 101(o) touches on an exceedingly important question—the role of the States in the siting of Federal repositories. The "consult and cooperate" phrase is vague and insufficient. If sites are truly selected properly, the States will be cooperative. I would suggest selection of a site in a State should require confirmation, by a majority vote, of both houses of the State legislature if there are two houses; of one house if there is only one house. If you are really telling the truth about methods of waste storage, the State will cooperate with you, and I don't think you need to fear a State veto.

Section 102(c)(1) should be amended by striking "at least one facility" and substituting the words "two or more facilities." Our knowledge of site suitability is not such that we can designate a single "best" site: Hanford looks good mostly because there is a Federal atomic reservation here already, not because of any innate characteristics. There are many other desert sites that have the same characteristics on the surface. Part of the impetus behind Initiative 383, and a good bit of the reason for public suspicion and concern is that we feel ourselves victims of a sort of Russian roulette—which State will be the victim? During the 383 campaign we heard consistently from our opponents that 5, then 9, then 23 sites were under investigation—not just the basalt waste isolation project. If that statement is even remotely true, there should be at least two suitable sites in the United States.

Title II, sections 201(9) and 201(16) should read "radioactive waste" rather than "nuclear waste." Section 201(10) is the same vague language we have always been burdened with. The adjective "highly radioactive" means nothing. Activity should be specified in terms of Curies/kg or Curieg/m^3, and the inclusion of alpha emission in the

definition should be specific. Definitions of "low-level waste", even though that's not addressed in this bill, and of the words "primary source of energy" should be included. It is not clear what is meant by that in this bill.

There are major concerns with both sections of title III. Some of these have been touched on by previous speakers. Expansion of storage facilities at existing nuclear plants, and away-from-reactor storage. Sections 312 through 314 sharply curtail the public hearing and comment process for expansion of existing facilities; the interim licensing allowed by section 312 virtually guarantees that expansion will be licensed. We've had too much experience with that kind of interim procedure. This feature, section 3—section 312(a)—should be stricken from the bill. Section 313 should be amended to require a public hearing, including oral testimony as well as oral argument. Section 311(a) should also include a subsection in that list of items to be considered that says, "dispersal and food chain entrainment of radionuclides." Again, that is the matter—That is what we are really concerned about.

I would caution you against an overall policy about expansion of onsite storage. For some nuclear plants, it could be acceptable; for others, even the current level of onsite storage is probably too high. Some of the older nuclear plants constructed in the East were built when we knew much less about radioactive storage than we know now. In some cases there may be even a need to curtail onsite storage, so an overall policy is not a good idea.

The need for any AFR interim storage sites is questionable, and it is not clear what the maximum storage capability of "2800 T of uranium" means or implies. If this is the amount of pure uranium in the spent fuel, it could mean 28,000 or 28,000 tons—metric tons of spent fuel. This anticipates the maximum possible growth of the nuclear power industry, as estimated in the EIS on commercially generated radioactive wastes, and no additional existing storage capacity. If we get this quantity of waste, maybe we shouldn't be generating it quite so fast.

We must also face the fact that the "interim" AFR site or sites will—may really be permanent sites, because it is simply not true that we know how to dispose of radioactive waste permanently. Therefore, if there are to be any AFR interim storage sites, there must be several, and the distance which spent fuel is transported to reach the nearest site must be as short as possible. There's also some question about a one-time charge being sufficient.

The safeguards for the State in which an interim AFR site is located, which are set forth in section 308, are inadequate. The selection decision should not be left solely in the hands of the President. The legislature of the State in which a site is proposed should be able to veto the siting and again, if you're being honest about what you say, the State will not use this veto power; they will go along with you. I truly believe that people feel responsible about this.

While the desire to authorize a full-scale disposal repository by January 1, 1988, is laudable, it is not a good idea to enshrine this date in the legislation. Putting it in legislation guarantees only that a site will be authorized by January 1, 1988, whether it is a good site or not. Moreover, there is an unavoidable implication that the first

authorized site will remain the only site, and we fear it will be Hanford. Don't put this date in the legislation. Fund a thorough research project involving several sites, and don't anticipate selection.

Similarly, the timetable given in section 403(b) is so rapid that I could anticipate right now which the two sites are. I would suggest three sites by January 1, 1984, and two more by January 1, 1985. The same suggestion on State legislative veto would apply here, as well. The date of the decision of section 405(b) should be moved forward to 1987 or 1988, but this date is not as critical as those in section 403. The President is not likely to delay. Moreover, there must be enough temporal flexibility to allow State legislatures to act.

Section 407 must be read with the view that a "test and evaluation facility" might very well become a disposal facility. It is imperative, therefore, that sections 407 (d)(1), (d)(2) and (e) be removed from this legislation. A test facility is definitely "a major Federal action significantly affecting the quality of the human environment" and must remain covered by section 102 of the National Environmental Policy Act. For corroboration, I would suggest that your committee ask for testimony from the citizens who live near the proposed site at Carlsbad, N. Mex. They do definitely think that it affects their health. Alternatives must also be considered and a full NRC licensing procedure undertaken. This is—this is, by the way, the only way that we will assure that unsuitable sites won't be used for radioactive waste storage or for a test facility.

The same conditions for multiple sites, State legislative approval, and so on, recommended for the interim storage facilities also apply to the long-term storage facility described in title V.

It is very heartening that title VI tries to put the financial burden of storing radioactive waste on the utilities which operate nuclear plants. I would only question whether the cost estimates are high enough. It is doubtful that a one-time fee will pay for either interim storage or disposal, and it may be that 1 mil/Kwh may not be enough, although if it isn't, should we be generating nuclear power? I hope it is enough. I would support Representative Isaacson's suggestion of an antiseverance tax, as well.

Title VII attempts to address State concerns. The proposal for State legislative action which I have made throughout would eliminate the need for the cumbersome procedure of title VII. Believe me, once again, this is not us against the Feds, and the States can be trusted.

I would like to comment finally on something that's not in my written statement, and that is briefly on the McClure amendment on reprocessing. Again, I would fear that we would enshrine something in legislation and then be committed to doing it. I would like to suggest an alternative, which is funding of a good study, a through study of two aspects of reprocessing, which are those which concern us the most—occupational and public health and safety considerations involved in the reprocessing itself; and a study of adequate security safeguards. Those are the two areas of reprocessing that are of concern. It's not whether or not we have reprocessing that is so bad, it's can we guarantee the safety of what we pull out, and can we guarantee that the workers who handle it will not be irreversibly harmed, nor the people who live in the vicinity?

I would like to thank the committee for this invitation and opportunity to testify. I hope that my comments have been helpful, and I would be happy to assist further in formulating the legislation. Radioactive waste is a problem of considerable magnitude; we are stuck with it, and it is high time that we addressed it.

Senator GORTON. Thank you.

Mr. Gendler?

STATEMENT OF MICHAEL W. GENDLER, ATTORNEY AT LAW

Mr. GENDLER. Thank you, Senator Gorton, Representative Morrison. I am Michael Gendler, an attorney in private practice in Seattle. In my law—in my law practice I represent the Don't Waste Washington Legal Defense Foundation, which is appealing to the Ninth Circuit Court of Appeals to defend the validity of Washington Initiative 383, which was enacted in November 1980 to limit import of low-level radioactive wastes into Washington. I am testifying before this committee on my own behalf, and not in the course of my representation of any persons or organizations.

As is recognized in the bill before the committee, and in the statements of Senator McClure, prompt development of a safe and efficient Federal program for the disposal of nuclear wastes from civilian activities is essential to the future of nuclear power. The nature of spent fuel and other radioactive wastes requires the Federal Government to assume control and responsibility for their storage and disposal. At the same time, the cost of storage and disposal, and of developing the technology to accomplish this, is the responsibility of the owners and operators of civilian nuclear powerplants.

Senate bill 1662 incorporates these basic concepts, and therefore deserves serious consideration by the committee. The following points are offered to suggest amendments which can enhance the bill's ability to achieve its purposes.

With regard to recovery of costs, the provision in the bill for a one-time payment to the Government by utilities for the use of storage facilities does not adequately insure the Government's ability to recover the full cost of developing and operating these facilities. If the costs escalate in an unforeseen manner, either the Government will not recover them, or utilities seeking to use the facilities in later years will be required to subsidize previous use of the facilities by other utilities. To avoid this possibility, a provision allowing adjustments to contracts as the full costs of managing radioactive wastes are learned should be included.

One excellent feature of the bill is that the Government will receive from the utilities the revenues to be applied for development and operation of the facilities prior to the time when actual expenditure need be made. This feature enhances the probability of full recovery of the actual costs by the Government.

With respect to interim storage sites, the bill now envisions construction of "at least one facility for the interim storage of spent fuel from civilian nuclear powerplants." To the extent that any interim Federal facilities are required, the bill should be reflected—should be amended to reflect a Federal policy to develop at least two interim storage sites. The sites should be located to minimize transportation distances from powerplants to the sites.

If there is only one interim site, the transportation distances from further reaches of the Nation may present more serious safety risks than those associated with the storage of the spent fuel. The bill's emphasis on testing and evaluation is designed to assure the safety of any storage facility. But the bill does not provide similar assurances with respect to transportation of spent fuel. Any policy which would result in a significant increase in transportation of spent fuel should be adopted only after development of safeguards providing assurances for safe transportation of the increased quantities to be transported.

With respect to the State role in the development of the facilities the bill recognizes a need for "improved consultation and cooperation between the Department of Energy and States and localities concerning Federal storage and repository siting and development activities." But the bill's provisions for consultation and concurrence are not sufficient to enable the States to present their concerns, and assure the health and safety of their citizens. No program for Federal storage and disposal of wastes can gain full public acceptance if it does not have the acceptance of the State most affected by the Federal program. The bill should be amended so that the approval of the State legislature is required as a prerequisite to a final decision locating a Federal storage site or repository in that State. Alternatively, a procedure analogous to the "consistency" procedure employed in the Coastal Zone Management Act might be inserted into the bill. Section 307 of the Coastal Zone Act prohibits activities inconsistent with the State coastal program unless the Secretary of Commerce determines that overriding national interests require approval of the inconsistent activities. The Secretary has promulgated regulations under that act which enable a State or the proponent of the inconsistent activity to obtain review from the Secretary of a consistency determination. These regulations include provisions for negotiation and formal mediation. Most important the regulations assure that no actions prejudicial to any interest will be taken until the State's concerns are addressed fully by the Secretary.

A similar statutory scheme here would give the States far better ability to protect their interests while preserving to the Federal Government the ultimate decision as to siting of storage and repository facilities, and to act contrary to one State's interests only where overriding national considerations so require. Under the present bill, the Governor may notify the Secretary of State's objections to a facility and the Secretary is required to suspend further work pending a determination by the President or Congress. However unless the President or Congress acts within a specific short period of time the Secretary's previous decision to proceed becomes final. The results of such a procedure are the delay in implementation of a project without any assurances that the Governor's objections will receive serious consideration and action.

Past experience indicates that the citizens of a State will react strongly to the perception that the State's interests are being ignored and the State's citizens' health and safety not protected, when the national interest is invoked as justification for placing unique burdens on the citizens of that State. While the provisions requiring early consultation and coordination with the States are encouraging, the bill should be amended to provide an affected State with an actual voice in the decision to locate a facility in that State, and to insure

meaningful review of a decision likely to be perceived adversely by the citizens of a State.

The bill does not give the States a sufficient role in the siting of storage and disposal facilities. After the Secretary has determined that a particular area is a promising one for development of a facility, the State should be given an active role in the precise location of the facility. Such a scheme would take greater advantage of knowledge of an area at the State level, would assist in minimizing environmental and other adverse impacts, and would improve public receptivity to the facility. The role of the State should be at least as great with respect to the siting of the waste repository as it is with respect to the siting of nuclear powerplants.

Consideration of financial impact to the States is entirely absent in the bill. Yet a decision to locate a facility within a State almost certainly will entail significant costs, some direct and others less apparent, to that State and its citizens. One direct cost will be additional costs incurred in maintenance and operation of the highways which will receive significant additional traffic in wastes, and the resulting wear and tear of the roads. An indirect cost is the loss of use for another purpose of a site selected as a facility, and the possibility of loss of tax income to the State. Damage to the State's environment is another inevitable result of locating a major facility in the State.

One final suggestion with respect to the financing program is that the utilities in a State in which a facility is located should be exempt from the mandatory fee required under section 603(a) of the bill, in order to ease the burden on the citizens of the State that are assisting the rest of the country in meeting the burden of locating and storing the wastes.

With respect to the test and evaluation facility, development of this facility should not be exempt from the NRC licensing process, and should not be exempt from the National Environmental Policy Act. As a practical matter, and especially in view of the large expenditures which will be required to develop the test and evaluation facility, it is very probable that the test and evaluation facility will become the first long-term permanent disposal facility in the Nation. The expenditure of funds itself will create significant pressure to continue use of the facility for long-term storage or permanent disposal. The decision to locate a permanent waste facility is perhaps the most significant one to be made under the bill, and it should not be made by default because of previous decisions.

For this reason, it is especially inappropriate to exempt the test and evaluation facility from the licensing requirements of the NRC and the provisions of the National Environmental Policy Act. Because the initial determination of the location for the test and evaluation facility may be the most significant decision made under the bill, it is this decision which must be subject to the most careful scrutiny possible.

For the same reason, a significant and substantive State role is essential in development of the test and evaluation facility. Public reactions to the entire program will be especially adverse if the public perceives that a permanent disposal facility decision is made on the

basis of a prior decision which shortcut proven licensing procedures, and which eliminated State participation.

The process of obtaining State approval can be expedited through incorporation into the NRC licensing process. Present NRC licensing rules give the State the right to intervene as a party in licensing proceedings. But this process will be meaningful only if the test and evaluation facility is fully subjected to NRC licensing requirements, including the requirement for public hearings, as indeed a proposal of such major importance should be.

The bill in several places exempts development of facilities and other proposals from the requirements of the National Environmental Policy Act. While these exemptions may be appropriate if there are alternative mechanisms for insuring thorough consideration of the environmental and other impacts of the proposal, one difficulty with the exemptions, as written, is that it is the early development of the proposal which is exempted. One of the major purposes of NEPA was to encourage early identification and consideration of potential adverse impacts and alternatives. By exempting early activities under this bill from NEPA, the major purpose of NEPA is defeated. This is especially true with respect to the exemption for consideration of alternative sites for the first permanent repository. Full evaluation of alternatives is necessary before the first repository site is selected, not after. The deadlines for selecting the first site are unrealistically short, and will undermine the public confidence in the decisionmaking process of the Department of Energy regarding this important decision by supporting fears that the site was selected solely for political expedience, and without sufficient study and assurances of safety.

I thank this committee for the opportunity to appear before it, and I hope that my testimony is useful to the committee in its work on this important bill.

Senator. GORTON. Thank you both for being here. Ms. Weiner, I have a question as to one of your proposed changes. You state that section 101(i) is incorrect, and that it should better read "methods and techniques under investigation indicate the possibility of isolation of spent fuel and high-level radioactive wastes from the environment for up to 600 years."

Ms. WEINER. Where it says 600——

Senator GORTON. The two halves of that—one is the rather weak language of "possibility" and the other is the "600 years." Could you enlighten me?

Ms. WEINER. OK, I'll take the 600 years first; 600 years is 20 half-lives of ^{90}Sr and ^{137}Cs. If you take all the transurancis out of spent fuel, then what you have left after passage of a considerable length of time as far as radioactive stuff is concerned, is mostly ^{90}Sr and ^{137}Cs. These are the two very abundant long half-life isotopes, and that's where the figure 600 years comes from. The intent of putting in 600 years is that, realistically speaking, I think that's probably the best prediction that people can make, and that if we can even predict that. Maybe 300 years, 10 half-lives of ^{137}Cs and ^{90}Sr would be a better prediction, but those are the two major new clouds of concern, as far as leaking into the environment is concerned.

Senator GORTON. Why are you so cautious as to say we have reached only the "possibility"? My interpretation of possibility is that it's less than a 50–50 chance.

Ms. WEINER. Well, I don't want to argue semantics, but to date, the long-term storage of radioactive materials has taken two farms—in a matrix, like glass or ceramic, or in a geologic formation, and we have not done sufficient investigation of either one, and the investigations that have been done so far of both really haven't given us any indication that it can be done for longer periods. Now, perhaps in 5 years we'll be able to make a statement like the one that is currently billed. I'm not suggesting that it isn't possible; I'm just suggesting that our current state of knowledge wouldn't allow me to make that statement, anyway.

Senator GORTON. A broader question for each of you. Each of you has stated that 1662 at least represents a step forward from the nonaction which has gone on for some 35 or more years. Each of you has many criticisms of the bill. I'd like to ask each of you to tell me, if you could make two changes in the bill, of all of those you suggested, which two would they be? In other words, what's the order of importance of your concerns? This is going to give you four, if you're at all smart, of course, between the two of you; but Ms. Weiner, if you would start on that? I really would like to know.

Ms. WEINER. OK.

Senator GORTON. Out of all of these many things what you think would be the most vital?

Ms. WEINER. I think the most important is the increased State role; that is, the State veto power over selection of the sites; and I would say that the second most important, as far as I can see, is the retention of the NRC licensing procedure consideration under the National Environmental Policy Act, and full hearing procedures in the selection of test facilities, interim storage sites, and permanent disposal sites.

Mr. GENDLER. Well, we can double check. I already wrote my notes, and I agree with those two priorities, so we independently came to the same conclusion. Perhaps as an attorney I have too much confidence in the value of procedures, but I think that is the bottom line regardless of what substantive things are encouraged. If the procedures are intact, there will not only be a better decision, but one which has the public confidence. So, again, if the State role is substantive and if the NRC licensing procedures are fully adhered to, I think the results will be a waste repository section that actually works and has public confidence that it does work.

Ms. WEINER. Senator, could I make one further comment?

Senator GORTON. Sure.

Ms. WEINER. If the Federal Government, the NRC, and the Department of Energy have to convince the State, a lot of the other things that I would want to change in this bill will take care of itself, because that is the main thing. I do have confidence in the people in the State legislature. If they're convinced that it's OK, that it safeguards the health of the people here, then I think a great deal of the other stuff will be handled in that process of convincing them.

Senator GORTON. I'm going to give you another chance to give me one more priority, and I have a question in connection with that

priority. I think I would have to say to you very bluntly that it seems to me unlikely that Congress is going to give that kind of veto power to the States in connection with this legislation. You've heard the testimony here of those who represent the States, at least as institutions, and that the concern for the nature of this problem is such that I doubt that Congress is going to want to be what it would consider the prisoners of the States. I ask you in connection with any additional relatively high priority you have, I was somewhat surprised that you did not list a stronger requirement that we have something other than a straight track to a single depository.

Ms. WEINER. That would have been the third.

Senator GORTON. All right. Would that be the same, as far as you were concerned?

Mr. GENDLER. Yes, and especially in view of the way the bill is now structured to require the decision at such an early date, and without thorough consideration of alternative site and/or requirement even of examining other sites until the second repository site selection process is entered. I think the most important thing in connection with preserving the integrity of the process is to examine the alternatives early, rather than later; and again, as an attorney, the late examination of alternatives leads to litigation and delay. If they're examined early on, people get to voice their concerns, and whatever decision ultimately is reached is much more likely to withstand any judicial scrutiny. I'm hoping, though, that despite your pessimism about the State role, that perhaps you could suggest something a little stronger along the lines of the consistency provisions, which still does preserve to the Federal Government the appropriate administration official the final word, although it makes them consider more thoroughly what a State—a State's legitimate grievances are.

Senator GORTON. Something like that may well be possible.

Sid?

Mr. MORRISON. I'd like to pursue your point just a little further. Both of you came down very strongly in your testimony in response to Senator Gorton's inquiry about the least or the most important features. We've talked about test facilities being licensed by NRC, plus being subject to the National Environmental Policy Act, and I'm wondering how far do you carry that? For instance, would the near surface test work being done at Gable Mountain where there actually is no radioactive material involved; they're testing the ability of the basalt to expand and react to heat, as there would be if there was a canister there, but it's being generated by electrical means instead of nuclear power. Do you mean that we couldn't even proceed with that sort of an evaluation without running the full regulatory track line?

Ms. WEINER. I was responding in my comment to the description of the test evaluation facility that is given in title IV of the proposed bill, and this includes under section 407(b), "* * * accept a total of not more than 300 packages of solidified high-level radioactive waste and spent fuel * * * permit continuous monitoring, management * * * accept waste and spent fuel packages incorporating multiple barrier design * * *" and so on. At some point in the test of a facility you're going to have to test it with real stuff, whether you remove the material from the facility and make a mockup, or

whether you actually deposit radioactive waste there. I would agree with you that if a test went no further than electric heaters, you probably would have to subject it to NEPA, but that's also not a good test. That's an incomplete test and evaluation facility, so at some point if you're going to have a complete test, you're going to have to——

Mr. MORRISON. So that would be your threshold as relates to the language of the bill?

Mr. WEINER. My threshold would be, and there is implicit in that, Representative Morrison, the fact that if we do test an evaluation, it is going to be a thorough evaluation.

Mr. MORRISON. OK. One other question. You made a comment that "Hanford looks good mostly because there is a Federal atomic reservation here already, not because of any innate characteristics." Are you, then, saying that the basalt evaluation has come up with nothing which gives you any encouragement at all about a permanent repository?

Ms. WEINER. I wouldn't put it that way I am a little supprised that after several years of operation of the basalt waste project—I read their annual reports. Their annual meeting conflicts with my own teaching schedule, so I can never come over for it, but there are still a large number of thought experiments and model types of experiments being done on the Basalt Waste Isolation project, not real, on the ground, experiments. I am not familiar enough with the project to be able to comment about why this is so. I'm just surprised that it is. Probably with the investigation of basalt, we are much farther ahead in our knowledge of Hanford as a storage site than we were 4 or 5 years ago; that's true. Four or five years ago, Hanford looked good because it was in the desert. However, we still don't know whether the basalt is better, worse, or the same than a number of other sites that are situated in geographic locations, topographic locations and locations that are similar to Hanford. Do we know that Hanford is better than the Nevada test site? Do we know that Hanford is better than Los Alamos?

Mr. MORRISON. So, at this point, you would say that even if we develop the fast track concept, that Hanford might not be selected?

Ms. WEINER. I think it's on the way. I would think, just as a guess, Hanford is certainly not the worst site. It's certainly a good candidate for a site. Whether it is one of the two best in the United States, we can't say at this point. It would probably be one of the 10 that would be looked at for top selection.

Mr. MORRISON. By the way, I have tremendous respect for you and the role you played in 383. I didn't agree with the position, but I certainly respect your own personal involvement, and would question you, then, as a leader of sort of an antinuclear, or at least anti-waste position within the State, if the bill were modified as you have proposed in your paper, which was very well done, would you appear in front of the State legislature on behalf of long-term nuclear waste storage?

Ms. WEINER. Representative Morrison, I have always favored, and when we wrote 383, we favored responsible radioactive waste management. Yes; if a number of these changes were incorporated into Senate bill 1662 and if the results of the Basalt Waste Isolation project were

positive—and I have no reason to believe that they won't be—I'd be happy to appear, certainly. This is not a blocking effort. It would have been very easy for me and for Mr. Gendler to come here and say, "This is just another attempt to pull the wool over our eyes, and we don't like this one, either," but we do, as a matter of fact. I think this is a really good thing for the Senate to do. It's high time that the Senate took this on. I only wish this bill had been begun 30 years ago.

Mr. MORRISON. I appreciate that very, very much.

Senator GORTON. Thank you both.

We'll now hear from Messrs. Withers, Fremling, Deju, and Lee, and I think all of you can come up.

Mr. Withers, you may start.

STATEMENT OF BART D. WITHERS, VICE PRESIDENT, NUCLEAR, PORTLAND GENERAL ELECTRIC CO.

Mr. WITHERS. Senator Gorton, Congressman Morrison, my name is Bart D. Withers. I am vice president, nuclear, for Portland General Electric Co. My company operates the Trojan nuclear plant located about 40 miles north of Portland, Oreg. Trojan has a net generating capacity of 1,130 MW electrical and is a major electrical generating resource for the Northwest. PGE is also the owner and constructor of the proposed two-unit Pebble Springs nuclear plant in eastern Oregon.

I am pleased to appear before you today. Portland General Electric Co. supports Senate bill 1662 because it defines a comprehensive and timely course of action by the Federal Government on nuclear waste disposal. This positive action is mandatory to insure retention of nuclear power as an option for future electrical generation and to insure continued operation of existing nuclear plants.

Let me review our experience in dealing with spent fuel generated by Trojan.

When Trojan began operation in 1975, PGE planned to ship the spent fuel to the Allied-General Nuclear Services reprocessing plant in Barnwell, S.C. In 1977, it became clear that reprocessing would not be available, and PGE would have to temporarily store spent fuel onsite until the away-from-reactor storage facilities became available. The U.S. Department of Energy announced in 1977 that away-from-reactor storage facilities would be provided by the Federal Government by 1985.

In January 1977, PGE applied to the Nuclear Regulatory Commission for a license amendment to provide additional storage capacity at Trojan. This application resulted in a 31-day contested NRC hearing requiring about 6,000 pages of testimony before approval was granted in October 1978, 22 months after the initial application. Sufficient storage capacity is now available at Trojan to provide full-core discharge capacity until the spring of 1986 and for the continued annual refuelings until the spring of 1989. Positive assurance must be provided within the next year that an away-from-reactor storage facility will be in operation by 1986 to preclude nuclear utilities from having to commit to providing additional onsite storage.

Oregon State law (ORS 469.525) prohibits disposal of nuclear power-generated radioactive wastes except for temporary storage at

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nuclear reactor facilities. Oregon State law also precludes siting of additional nuclear plants within Oregon until a Federal nuclear waste depository is available. As a result, the Oregon State Energy Facility Siting Council suspended the hearings required to obtain approval to construct the Pebble Springs plants. It is therefore extremely important that a consistent reliable Federal policy for nuclear waste dipsosal be mandated by Congress to demonstrate to Oregon citizens, as well as all citizens, that nuclear waste disposal facilities will be established in a timely manner.

The following provisions in Senate bill 1662 are important for prompt development of nuclear waste disposal facilities and are supported by Portland General Electric Co.:

We support the identification of specific dates for the important milestones that are required for completion of the nuclear waste management program such as promulgation of Environmental Protection Agency standards, site selection and NRC licensing.

We support the consolidation of nuclear waste management into a coherent program that addresses away-from-reactor storage facilities geological repositories, monitored retrievable storage and test facilities.

We support the definition of how States are to participate in the siting process and how State objections are to be resolved. The provisions of requiring one House of Congress to sustain the State's objection to a proposed site is reasonable, although requiring both Houses of Congress to sustain the veto is preferred in view of the need for siting nuclear waste disposal facilities.

We support the clarification of how the National Environmental Policy Act is to be applied to the nuclear waste management program. We agree that a full-scale NEPA environmental impact statement should not be required until final site selection has taken place and authorization of Congress is requested for construction of the repository.

We support the assurance of funding for nuclear waste management activities by assessing a fee of 1 mill per kilowatt-hour for electricity generated by nuclear powerplants. Although PGE does not consider requiring utilities to, in effect, collect Federal taxes to be a desirable precedent this fee is supported since it will provide necessary funding for the program.

We support the difinition of how the NRC is to proceed in licensing additional onsite temporary storage of spent fuel at nuclear powerplants.

Four recommendations for changes are offered on Senate bill 1662 to facilitate completing the nuclear waste management program:

Section 302 requires the Secretary of the Department of Energy to provide away-from-reactor storage for nuclear powerplants that "cannot reasonably provide adequate spent-fuel storage at the powerplant site." The Secretary is to propose rules for use in making this determination. We recommend that this bill be made more specific to guide this determination. For example, State laws which preclude storage of nuclear wastes or spent fuel should be considered to be sufficient demonstration that additional storage cannot be provided.

Section 305 requires the Secretary of the Department of Energy to provide away-from-reactor storage facilities as soon as possible.

Senate bill 1662 requires that the Secretary submit an application to construct, acquire, or lease this facility before January 1, 1981; however, no specific date for facility operation is required. We recommend that the legislation specify the date the facility is to be operable to insure timely operation consistent with congressional objectives and to provide a planning basis for utilities operating nuclear powerplants. An operational away-from-reactor storage facility should be available by 1985.

Sections 312, 313, and 314 describe the procedure for licensing increased onsite storage capacity. PGE supports these provisions; however, since water-basin spent fuel storage is a well-known technology, it is recommended that legislation require the NRC to generically approve installation of maximum storage capacity in existing spent-fuel pools. In this manner, individual utilities could provide maximum onsite spent-fuel storage consistent with congressional intent without submitting redundant applications or repeating lengthy NRC hearings. In the absence of generic approval, the legislation should provide that NRC hearings be dispensed with. Nothing in the way of safety is to be gained through case-by-case hearings for increasing spent-fuel capacity at each reactor. It is not in the national interest to delay installation of increased capacity by holding contested hearings when the primary interest of the hearing intervenors is to block storage and to shut down nuclear plants.

Title VI proposes imposition of a fee of 1 mill/per kilowatt-hour on electricity generated by nuclear powerplants. The moneys collected through this fee are to be used to finance the Federal waste management program. We recommend that some of these funds be utilized to provide financial assistance to State and local governments of areas affected by nuclear waste disposal facilities. This financial assistance should remove one significant obstacle for locating these facilities within a State.

In summary, PGE supports Senate bill 1662 as a mechanism for defining the program for providing nuclear waste disposal facilities. We urge its prompt passage.

This completes my prepared statement, and I'll be happy to participate in the questioning.

Senater GORTON. Thank you. We'll go on to Mr. Fremling at this point.

STATEMENT OF ALEX G. FREMLING, MANAGER, RICHLAND OPERATIONS OFFICE

Mr. FREMLING. Thank you. I'm Alex Fremling, manager of the Richland Operations Office of the U.S. Department of Energy. I am pleased to appear before you today to comment on Senate bill 1662 as it relates to the basalt waste isolation project at Hanford. My prepared statement is brief, but hopefully for the benefit of all I will make my oral summary even briefer, with the full text admitted for the record.

As manager of the Richland Operations Office I am the senior onsite Department of Energy official responsible for the basalt project.

As an attachment to my prepared statement I have included a chart showing the organizational relationships of the Hanford par-

ticipants in the project. You will note that the Department has the overall responsibility for the work with Rockwell Hanford Operations being the responsible onsite operating contractor. In this capacity, Rockwell provides day-to-day technical direction of the work. Dr. Raul Deju is the project manager for Rockwell.

The architect engineer for the project, including design of a repository, is a joint venture of Kaiser Engineers/Parsons Brinckerhoff Quade & Douglas. We have not yet selected a construction manager for the exploratory shaft and potential follow-on activities.

I note in my prepared statement that earlier this month in Washington, D.C., Dr. Shelby Brewer, who is the Assistant Secretary for Nuclear Energy, summarized the current Department of Energy nuclear waste management program, and I've included the substance of his testimony in my statement, and I will not repeat it at this time.

Basalt represents one of the three alternative geologies being explored under our national program. In our basalt waste isolation project, we presently have extensive geologic and hydrologic characterization efforts underway with the work being conducted from the surface. The exploratory shaft to be constructed during the period from 1983 to 1985 will permit access by geologists and hydrologists to the media of interest (at depth) for additional characterization testing. This will give us confirmatory data on studies already conducted at shallow depths.

I emphasize at this point that since 1979 we have had a joint Federal-State basalt waste isolation project working group to assure that the State of Washington is kept informed regarding our activity, and has an opportunity to input to the effort. We have also had a very active public information program, including public meetings, technical meetings, speakers, bureaus, tours and briefings, reports, and backgrounders for the media.

The Richland Operations Office and Rockwell have only considered impacts on present schedules based upon the information provided in Senate bill 1662. Certainly some acceleration is possible. But to answer the questions of whether and how the milestones proposed in the bill can be met would require more precise and detailed analyses of the bill's provisions, the availability of resources, and review of technical limitations. Clearly, however, the schedule in the bill will allow less time to accomplish all of the activities involved in the development of a repository, thereby potentially affecting the quality and quantity of the data and analyses which will result. This could in turn also impact our ability to work with the Nuclear Regulatory Commission and the States and could complicate, rather than facilitate these activities.

In summary, our job at Hanford under the basalt waste isolation project, whether under the present program or under the provisions of 1662, is to determine whether or not it is technically and operationally feasible to use the basalts as a repository. We still have work to do and issues to be resolved, but thus far we have found no bases to indicate that the basalt is not acceptable.

I will be prepared to answer questions when you're ready to enter into that discussion. Thank you.

Senator GORTON. Mr. Deju.

STATEMENT OF DR. RAUL A. DEJU, DIRECTOR, BASALT WASTE ISOLATION PROJECT

Mr. DEJU. Mr. Chairman, Congressman Morrison, I appreciate the opportunity to appear before this committee and, again, for the sake of brevity, I will condense my statement.

My comments today will try to cover three topics. I am the director of the basalt waste isolation project for Rockwell, the contractor heading this effort for the Department of Energy. First, I will try to give some general and some technical background on the project and how it relates to other programs. Second, I will try to show how the project would have to be restructured in light of the bill; and finally, I will offer some concluding comments regarding the proposed bill.

First of all, the U.S. Department of Energy's national waste terminal storage program, which was started in 1976 is aimed at integrating all of the activities related to feasibility studies to evaluate various locations within the United States as potential sites for nuclear waste repositories, and a number of media and locations have been looked at during the past 5 years. Under the current program, three primary media are being looked at—basalt, volcanic tuff, and salt—in various States, either bedded salt or domes of salt. The Office of Nuclear Waste Terminal Storage Integration of Battelle Memorial Institute is the integrating contractor, and the basalt waste isolation project is an active participant of this overall program.

The Hanford site, located in south-central Washington State, which we're all familiar with, has been actively used for nuclear activities since 1943. Since 1976, Rockwell has been a part of this national waste terminal storage program, although as pointed out by Representative Isaacson earlier, studies in the 1968 to 1972 framework also look at basalt as a potential media for storage of defense waste.

A repository, were it to be constructed in the basalts such as exist under the Hanford site, would depend on the isolation characteristics of the basalts, of which I have a sample here—very dense, very tight rock, and this would be complemented by an engineered waste package, which would afford the containment required to assure isolation of the waste.

During the past few years, extensive site characterization studies, waste package investigations, and repository design have been conducted as part of our program. Particular emphasis has been placed on the study of the issues remaining to be resolved as part of this project, and the emphasis to date has been on the study of the groundwater regime beneath the Hanford site inasmuch as the groundwater would offer the prime pathway of contamination of any repository. It is very important that this hydrologic characteristic of the strata be studied and be understood and that we be able to model the transport potential from a nuclear waste repository.

In addition to that, we have conducted extensive research addressing a number of other key issues, such as the seismic setting of the site; such as the kind of thermal stresses, as pointed out by Congressman Morrison earlier, the subject of a near-surface test facility. In fact,

we have conducted for approximately 15 months test of this facility using heaters to simulate the decay of heat from the radioactive waste package. Engineering studies have also been conducted to date as part of the project, and a lot of this has involved research on possible waste packages that one could engineer in a basalt repository and the environment that it would have to live in and the conceptual design of a basalt repository. I refer you back to the statement by Mr. Isaacson and the attachment to his comments regarding the geochemical environment that the basalts afford for a nuclear waste package.

We are presently very actively summarizing the results of all these R. & D., studies, and there is a report, entitled a Site Characterization Report, which is scheduled to be transmitted to the Nuclear Regulatory Commission by the Department of Energy in late 1982. That report will summarize all of the R. & D. that has gone on at this site since the beginning of the project. I would like, for the benefit of the committee, to summarize some of the major findings of the R. & D. to date.

First of all, we have begun focusing our siting studies on the central part of the Hanford site, and for your benefit, I have the location map showing the Hanford site and showing the area where we're focusing our studies. For reference, these are the two defense waste disposal sites at 200 West and 200 East areas. We're focusing on this general area of the site [indicating], and we have a photograph of the site here—essentially a flat plateau, very little relief, sage brush. We have conducted the siting studies in accordance with the basic criteria promulgated in the drafts of the Nuclear Regulatory Commission's proposed 10 CFR 60, and we have now narrowed the siting process to approximately 18 square miles. For reference, the Hanford site covers about 580 square miles.

We have narrowed the siting process to a reference horizon which we call the Umtanum horizon, which is located within a section of basalt called the Grande Ronde Basalt at a depth of about 3,500 feet beneath the ground level. The layer of basalt, of rock similar to what I have here in my hand, is approximately 210 feet in thickness at the site that has been chosen as a reference. It is a very dense rock, and it's extremely continuous laterally.

As pointed out by Representative Isaacson, the geochemical environment established in the repository in the Umtanum horizon is highly favorable. Conditions in the basalt particularly favor the stability of metal waste form containers. It is very significant that metals like copper are stable in a basalt environment, as shown by deposits of native copper in the State of Michigan. These are basalts that have been laid for millions of years, and there's no reason to believe that a metal would not be able to survive through that kind of environment for long periods of time.

In addition, the basalts are very stable under the imposed thermal regime, as pointed out by some of the tests conducted for the last 15 months at the near-surface test facility. Individual layers, especially in the Grande Ronde Basalt, possess very low water transmitting capacity. Such a characteristic would imply a very slow movement of radionuclides, were these to be released from a nuclear waste repository. Preliminary results of studies to find the age of waters entrapped

in some of the basalt layers indicate that some of these waters could be as much as 100,000 years old; thus the waters that are trapped in any of these layers migrate extremely slow, and should not pose a hazard to contamination.

In addition, I should point out that the central portion of the Umtanum horizon has been found to be devoid of moving ground water, and they say a picture is worth a thousand words, so I would like to refer to the picture I have behind me. This is a picture taken from a camera at 3,674 feet inside an 8-inch bore hole located approximately 1 mile to the east of the 200 West area and approximately 2 miles from the reference site. You will notice that here you can see the walls of the rock. This happens to be the Umtanum horizon. This hole was completed in 1976, has been open to the environment for approximately 5 years, and has not produced water from that horizon. We have blown up the pictures; we have been able to look at the cracks, and this is one of the primary things that you will be able to do once you get underground inside an exploratory shaft, as proposed in the bill. You will be able to visually see what the rock looks like, and examine any problems that you may have.

In summary, we still have an aggressive research program underway, based on the comprehensive studies conducted thus far, but we have to date encountered no evidence that would preclude continuing to investigate basalt as a potential repository medium for the terminal storage of nuclear waste.

As I pointed out earlier, the results of the past research and development studies, as has also been noted by Mr. Fremling, has been the subject of extensive interface with the State, but it has also been the subject of extensive review by peer review committees. We maintain four active peer reviews at this project, and we have also been reviewed by the National Academy of Sciences National Research Council. A liaison with the State of Washington has not only been maintained with the present administration, but also with former administrations.

I want to give you a little bit of a flavor of the kinds of things that we're doing at this point in time; and, as I pointed out, we haven't found any major impediment to siting the repository at Hanford, but we still have a way to go. The studies remaining to be conducted include resolution of remaining geologic and hydrologic issues and studies to obtain data required for repository design. These studies require implementation of an extensive subsurface exploration program from an exploratory shaft at a reference site.

We are actively pursuing waste package studies to optimize the configuration of the waste package to be used and to assess the behavior of various materials which may be used in waste packages; and we need to upgrade the present repository conceptual design.

As I started by saying, I will also comment on the effect that Senate bill 1662 would have on our present schedule. For the record, I have entered into my testimony two charts showing our schedule, and the schedule that would be required under 1662 on a comparison of milestones, and I will move on to talk about how these tables compare.

First, if Senate bill 1662 were to become law, we would need to accelerate completion of site characterization and technology develop-

ment study required for a license application. We would have to submit an early license application using input only from site characterization and technology development activities and preliminary underground exploration, but no input from waste package optimization studies, subsequent underground exploration, nor the test and evaluation facility.

We would have to start designing the test and evaluation facility earlier than planned to allow the January 1988 date for operation of this facility to be met; and we would have to proceed with design of the repository in parallel with design of the test and evaluation facility and in parallel with underground exploration.

What all this translates into is the fact that we would have to be able to use less data in the process of making the final decision. In conclusion, although the goals of Senate bill 1662 are optimistic, they should be achievable for a basalt repository provided an agressive program is immediately implemented and additional funding is provided to the project in the present and coming fiscal years. Such a program would also require extensive support from all Federal agencies involved, and extensive streamlining of the regulatory process.

As pointed out in my testimony, the present schedule calls for repository operations in basalt in 1999. Under Senate bill 1662, this would be accelerated to 1995, so that there is a 4-years' difference between the two of them. Our present schedule calls for operation of a test and evaluation facility in 1989, versus 1988 for Senate bill 1662. The goals of Senate bill 1662, as I indicated, could probably be achieved. The cost will—the increased cost that I mentioned in the earlier years would probably be offset by the effect of providing a repository approximately 4 years earlier. This completes my statement.

Senator GORTON. Thank you very much Mr. Lee.

STATEMENT OF GLENN C. LEE, SECRETARY, TRI-CITY NUCLEAR INDUSTRIAL COUNCIL

Mr. LEE. Senator Gorton, Congressman Morrison, my name is Glenn Lee. I am secretary of the Tri-City Nuclear Industrial Council. I have been a resident in our community since 1974. I have also been publisher of the Tri-City Herald since that time, a daily and Sunday paper of 40,000 subscribers, and I now have the title as publisher emeritus. We have a new publisher, Kelsay Billinwater, who's here in the audience.

I think it is a fair statement to say that I have been in touch with public opinion in this region and that the Tri-City area, southeastern Washington and northeastern Oregon has a great degree of public acceptance of nuclear power, and in your original invitation to me to testify, that was one of the items you wanted me to express; and when the hearing was held on the reactor licensing proposition for Hanford's first reactor, the testimony lasted 2 days and 2 nights, and never an opposition voiced—raised itself in all that time, and on the last evening the hearing examiners were very much concerned because no one showed up. So I would respectfully submit to you that there is a great degree of acceptance in this area for nuclear power and nuclear-oriented activities.

I don't want to run down any of these witnesses that I've heard here this afternoon, but I think, gentlemen, that you must also consider, as time marches on, that you will hear a lot of the same kind of testimony that you heard 10, 12, 15 years ago when a $10 lawsuit under the Environmental Protection Act would slow down or stop or kill a $1 billion highway project; and in the Seattle area you have a shining example of that on I–90, so I think that as you go along, you're going to have to make some decisions in spite of some of this kind of testimony that you have.

The Nuclear Council is a not-for-profit corporation. We've been in business since 1963. We have about 200 members of persons, firms, and corporations, and we're interested in the diversification of Hanford, the growth of nuclear power, and other good industrial development in this area.

I have read Senate bill 1662, and I've also read much of the testimony that's taken place during the hearings in Washington, D.C., and it is a very interesting record and most educational; and I would like to compliment you people in Washington, D.C., and congratulate you on your patience and the consideration that you give a problem like this. I've got a high degree of complimentary thinking about you. Keep it up.

There are a lot of expert voices testifying and advancing their ideas and their views to your committee; and many of the views are expert, but they're conflicting. Now, you guys are going to have to sort it out and get on with the work.

Some of the testimony indicates extended delay and argument, and it's been going on for years, and I fear for the future of this Nation and this program, if you continue to permit it to drag on and on and on. Congress has to take some action.

At some point you must adopt the best features of this bill. Take advantage of the best ideas, ignore the criticism, make a decision to get a nuclear waste program underway. If not, our utility industry, our economy, our military status is in big trouble in this country. We must have a strong, healthy energy system.

And I compliment you on the structure of Senate bill 1662. It's very comprehensive, and I can see you've done a lot of work.

So speaking for myself and the Nuclear Council, and as a layman, we wholeheartedly support your effort.

We know that Hanford's location way out here in the West is a long way from the locations of the majority of operating reactors or reactors under construction, and the subject has come up here today about transportation. But if Hanford contractors and the U.S. Department of Energy with its proven track record of performance in nuclear waste management can serve the United States as a waste site, I assure you that the tricity people will accept such an installation and will welcome it and cooperate 100 percent in its construction and management. And whenever we have something going like this in the State or the region, why, we get visitors from the other side of the mountains real quickly, and they can give you all the reasons why they can sit in their ivory towers and figure out why not to do something or why to stall something, but I submit to you that we've got to get something done.

Hanford, we all know, it's repetitious, is really the guardian of about 70 percent of all the waste in the country—the defense waste, and our scientists and engineers out here have successfully managed that waste, handled it, and packaged it for years in the laboratory.

So here at Hanford we are anxious to serve. It's our belief, too, that a national repository must be developed with both commercial and defense activities being taken into consideration—without undue regulation. There are two different ball games. It's apples and oranges. We've got to keep on serving defense, and you've got to serve the utilities.

In the bill under title VI, section 603, you propose to design a method to have utilities pay the way by charging a fraction of a cent for electricity. I think that's good. They have to sooner or later. We had a hearing here about 5 years ago. We had a Congressman from California, on a Saturday afternoon just like this. The weather's great outside, and we sit here hacking away at a problem; and after every witness he said, "Tell me, sir, what will it cost per kilowatt for waste disposal and reactor decommissioning?" He destroyed every witness, because they didn't have an answer. So the utility industry has to pay for this, and if that's a road block, eliminate it and get on with the work.

This is just a layman's attitude. I've been around here a long time. I don't agree when these people say that, "You're going too far too fast," or, "These deadlines are too early." Extending the present time until January 1, 1988, for a final NRC decision, that's a long time; too long. I hope it can be shortened in the interest of economic independence and national security.

There have been enough hearings in Congress and enough scientific studies on waste storage to fill a huge library. To keep on studying means delay. Delay and more delay might mean that we never get the job done, if we keep listening to these voices in the wilderness.

In my record, which I've submitted, I submit a list of studies and reports on nuclear waste from 1945 to 1980. Single-spaced, these studies cover three pages. Now, what causes me to make these kind of statements is that the fact in 1972, the Atomic Energy Commission announced plans to build a surface storage facility for high-level waste based on existing technology at that time, 1972. Hanford was a front runner for this site. Now, that's 9 years ago.

March 22, 1973, Dr. Frank Pittman of AEC testified at great length in Washington before the Joint Committee on Atomic Energy and stated the waste storage matter was a simple problem. He didn't need any new engineering that we didn't know about, maintain the material properly, shield it, remove the heat, get going, Pittman said. Now that was 8 years ago.

At the same time the National Academy of Sciences told AEC that scientific and engineering technology existed to handle nuclear waste successfully. Time went by. Nothing happened; and yet, Senator, and Congressman, some of these people are testifying here that we're going too fast. I don't think so. I think we spent a lot of time and we have a lot of knowledge.

AEC was dissolved, the Joint Committee on Atomic Energy disappeared, ERDA came and went, and so did President Carter. But the advancement of nuclear energy was reduced to slow motion.

Tricitians were disappointed. We've always supported nuclear programs. The scientists and engineers and technicians here are terrific. Their record is outstanding.

We have more than 10,000 people in the labor force, and every scientific discipline is here.

The U.S. energy program was born at Hanford with the first reactors. Hanford is a brainpower center with about 24 Ph. D.'s to every square mile in Richland.

Listen to this one. We're concerned about delay. We recall Dr. Clarence Larson, distinguished AEC Commissioner, testified in February 1974 that a high-level waste management plan was ready to go—completed in 1981. Now I attach a portion of Dr. Larson's testimony to the record. I hope you read it.

I also submit copies of letters from the record exchanged between Senator Magnuson and Dixy Lee Ray, AEC chairman at the time, February 1974. They both agreed Hanford was a good site for nuclear waste management, and AEC was ready to go. Nothing happened. I don't think we're in a hurry.

In 1974 we had two draft environmental impact statements on waste management at Hanford entitled "Wash 1538" and "Wash 1539." Hearings were held and views were expressed. Nothing happened, and time passed. We got Governor Evans and his cabinet over here. All day long Alex Fremling gave them the red carpet treatment—bought their lunches and took them out to Hanford. And we thought they were on our side, but they weren't. So when you talk about giving the State all this possible veto power, I'm not in favor of that.

Suddenly out of a clear blue sky, April 10, 1975 ERDA's Robert Seamans canceled the plans for retrievable surface storage facility and withdrew his request to Congress for funds. Now, I have a file 2 feet thick on this, and I can't see where we've been in a hurry. We're slipping.

On October 1978, the Carter administration, get this, Interagency Review Group—it's been mentioned here—released a report on nuclear waste management. It represented the combined efforts of 34 public agencies. DOE was going to update the program by 1981. So I don't see why we have to keep on studying this situation.

One item in the review group report was that the States should not have direct veto power over the location of waste facilities. They should be accorded "a consultation and accordance role," but not a veto power, and I think that's the way it's got to be. I don't think the State can stop a national Federal crucial effort.

I'm reminded of the stories when at harvest time, with the fruit on the tree and the wheat in the field, the U.S. marshal evacuated people in the Hanford area and moved them out and took their land and built the reactors in about 13 or 14 months, and here it is 30 years later, and we can't even handle the waste problem. There's got to be something wrong with our system.

So I want to give you people continued courage to see it the way it should be, and get on with the work.

The nuclear utility activity of the private utilities, the public utilities are not in very good shape financially, and I think that's something you have to consider. That hasn't even been brought up here today.

Under the section IV, the Senate bill 1662, you're asking the President of the United States to move swiftly; in another 4 years, by January 1, 1985, to make a decision on a permanent repository site. If his office has all the knowledge and testimony and findings that have been gathered over the years available, plus the recommendation, he ought to be able to decide by January 1, 1985 or before to make a decision.

To give NRC until January 1, 1988 for a final decision—that's really stretching it.

Oregon and California, as my friend here from PGE says—two States, Oregon and California, are now prohibiting construction of nuclear reactors until "the waste issue" is settled. Without adequate energy at reasonable costs, we can't operate this Nation nor a military machine.

The electrical generating utility industry in this country is experiencing very difficult times financially in the effort to construct reactors or even finish them, and then to find a place for the spent fuel cores.

I had a report here on PGE just the other day. In 1980, they spent $293 million and got credit for $68 million for construction; 1981, they've got to spend $310 million and $60 million for construction 1982, 1983, they've got to spend $750 million and $190 million for construction. They sold their Portland office building and leased it back. They've sold some turbines and leased it back. They've sold some facilities at Boardman Coal Plant and leased them back. Why? Money.

Pacific Power & Light Co., is selling bonds at 18.4 interest. You can't keep that up forever and run this country; so I think you gentlemen have to consider that portion of this situation when you finish this legislation.

We're burning up our natural resources—coal, oil, natural gas. All electrical generation takes 75 percent that's burned up. Throw it away. That can't go on forever.

So I submit that S. 1662 is a step in the right direction to help the utilities, and I congratulate you on your progress, and express the hope that we can speed things up with an earlier schedule, and the Nuclear Council supports your effort.

Thank you.

Senator GORTON. A question for either Mr. Fremling or Mr. Deju. One of you outlined the fact that there are studies in three different sets of geologic formations in the United States for storage—the basalt here, tuff, and salt domes. Are the basalt formations in the Hanford area unique in the United States? Is this the only place in the country in which this particular opportunity exists?

Mr. DEJU. We're talking about a particular type of basalt that we call flood basalts, and the reason why we call them flood basalts is because of the extensiveness of the deposits, and this is indeed unique. There are basalts in other parts of the country, but the basalts that we're looking at here are the Columbia Plateau, which covers approximately 100,000 square miles in the Pacific Northwest, and at the Hanford site we find these deposits in some of the thickest accumulations. The fact of the matter is that the Umtanum was primarily selected as a reference horizon because of its thickness.

Senator GORTON. So in that sense, in this one of these three fields, then, we are unique here?

Mr. DEJU. Yes; you are unique. In fact, you're very unique in the world. The other type of accumulation exists in India.

Mr. FREMLING. But we should have a science area. We're looking at other geologies other than basalts.

Senator GORTON. I understand. That was my next question. Would you describe those other geologies, where they are.

Mr. FREMLING. We're looking at bedded salt, located up in the Great Lakes area, as well as in the Southwest, and over in the vicinity of Utah. We're also looking at the tuffs down in Nevada, and we're looking at salt domes down in the Gulf States, and of course, the basalt here at Hanford.

Senator GORTON. How do the studies of those areas compare in their progress with the one that you've described here?

Mr. DEJU. Each of the geologies has been studied to a different degree. When the programs were being conducted in the 1960's, the primary emphasis was on salt, and at that point in time the primary emphasis was on bedded salt. The Kansas studies were on bedded salt, so there is quite a bit of literature and studies on salt. The Nevada program has been studied probably least of all as part of the program, approximately 4 years, but one should also add that there has been extensive studies at the Nevada test site because of the nature of the investigation.

Basalts have been studied for at least 15 years and very intensely for the last 5. If you want to compare all three of them I would probably summarize by simply saying that you could build a repository in all three media. I'm convinced that one could engineer a facility in all three media, but the facility is going to look different. Each media has got problems; each media has got a very great advantage; but what you have to do is you have to balance the advantages.

For example, in basalt, I mentioned the geochemical advantage. Survival of metals in basalt is a very good advantage; that is not an advantage in salt. Metals don't do very well in salt. On the other hand, salt has the advantage of plasticity—the fact that it would move and self-seal itself. So you have to look at the advantages and disadvantages of each media, and design a repository accordingly.

Senator GORTON. Does this indicate to you that we should in this bill, S. 1662, or whatever other bill we deal with, emphasize more of the breadth of these studies second, and third, potential sites, as opposed to going on a relatively rapid track toward a single decision?

Mr. DEJU. I think that the bill, in terms of schedule, as I indicated, gives you about 4 years difference in terms of the total saving of time that you achieve in terms of the ultimate construction and initiation of operation of the repository. Some of the earlier dates of the bill are extremely difficult to meet; very, very optimistic. I do think that the—with that provision, that some of the early dates are very optimistic. The emphasis on the bill is in the right place.

Senator GORTON. I have one other question here in this respect. What about the potential of granite on the eastern seaboard?

Mr. DEJU. The granite has been looked at in a number of areas in the Western United States, as well as in the East. There have been some studies at the Climax stock in Nevada. There have been some studies in Sweden. The Swedes in fact are looking at granite as a

potential repository media. The Canadians are looking at dense crystaling rocks similar to granite, also. Granite probably is also a good media.

Senator GORTON. We have not done much in that respect in the United States?

Mr. DEJU. Well, again, a lot of the information that has been gathered in basalt and some of the work in Nevada probably is applicable also to granite, but we have studied granite least of all the geologies.

Senator GORTON. I have one question for Mr. Withers, and then I'm going to ask Congressman Morrison to participate. The very first of the recommendations for changes in S. 1662 which you offered relates to the impact on Trojan of one of your State statutes in Oregon, and you want to make more specific that a State law which precludes storage of onsite nuclear wastes should be considered as an indication that a powerplant cannot reasonably provide adequate spent fuel storage at the powerplant site. I can certainly see that from the point of view of your utility, but from the point of view of public policy shouldn't we come up with exactly the opposite conclusion? The fact that the people of the State of Oregon are benefiting from nuclear power through Trojan should encourage States to say, "No we're going to take the benefits of the power, but someone else can take the waste"? Or should we perhaps, simply from the point of view of public policy, say that if you're unwilling to allow the wastes, that that should be counted against you rather than in favor of you?

Mr. WITHERS. Yes, I agree with you. I think that the language in the bill which attempts to coordinate one national waste policy is exactly what we need; and what we currently have with a law like the Oregon law and the California law is wrong—that to let each State run off in its own direction and establish laws that are in conflict with what's good for the country or the region is not in our best interest and we support the language in the bill which tends to consolidate this, and would hope that it would address this kind of a problem.

Senater GORTON. Sid?

Mr. MORRISON. Alex, I've had a chance in the few months I've been there to notice that Congress passes laws with timetables in them that are absolutely impossible to meet; in fact, they don't meet at all. So I'm wondering if somewhere—from Dr. Brewer or somewhere—that we could get the dates that should be substituted in this bill that could be reached by your research team within the Department of Energy?

Mr. FREMLING. In the testimony that I referred to earlier that Dr. Brewer gave in Washington, they supplemented his testimony with written comments, and did point out the problem with the milestones; that we do need milestones if we are going to get a repository completed in a reasonable timeframe, but they expressed concern that the milestones be consistent with the technical and institutional requirement, and that they somehow reflect the experience we've already had in the program; and they've made a commitment to get together with the staffers of the committees to go over and see if there is a reconciliation that can be affected be-

tween the dates which are currently in 1662 and ones that we think would be better intermediate dates on them.

Mr. MORRISON. Raul, have you done any coordination at all with Shell Oil Co. who's now drilled totally through the basalt layer on a couple of occasions? Have you been able to coordinate at all with them as to their findings?

Mr. DEJU. Yes; in fact, we try to, as part of our overall program, to keep a cognizance of what everybody else is doing and what is going on in the areas that impact us. The technique that was used, by the way, by Shell Oil to select a site for that particular well is a technique that we used here at Hanford to identify where the bottom of the basalt is, and Shell Oil and our geology staff have cooperated on that. We're also participants in our—in an overall study being done for the oil companies by a private corporation in Texas to look at the overall subsurface resources in this whole area through geophysical techniques; so we are not only cognizant of the Shell, but of the overall studies being done by the oil companies.

Mr. MORRISON. That's rather interesting. When I talk to them, they say they've never found—they've never worked in rock like this before that has so little porosity, if that makes you feel better in your efforts here.

Mr. DEJU. I think once one looks at a little bit of this rock, the porosity element of it becomes pretty easy to realize. It's almost like looking at a piece of glass.

Mr. MORRISON. Thank you.

Senator. GORTON. Thank you all very, very much. You've been most helpful to us.

Mr. LEE. Senator, I have one point I'd like to add in your concern concerning Oregon and their nuclear reactors, and why don't they keep their own waste. I think a waste site has to be a national asset, and whether it's in Oregon or wherever. If it's at Hanford, we should accept that waste; it's a national asset. And again, I submit to you that this is a bigger problem. The waste thing is just the tip of the iceberg.

Senator GORTON. Thank you.

Mr. LEE. And I'm sorry to say it, but I believe that as the financial situation gets worse and worse, that the Federal Government's going to have lots of problems with energy, and eventually, if it continues, and we see a case like Chrysler or Penn Central or something else. The utilities in 10 years' time will be nationalized, because they won't have the money to operate; high cost of fuel, inflation, redtape, regulation, diminishing profits, inability to finance—we won't be able to hack it. So this waste thing is just the tip of the iceberg, in my opinion.

Senator GORTON. Thank you.

We have two or three local witnesses at this point. We will hear from them for 5 minutes each, and Mr. Hughes, Mr. Arndt, and Mr. Petty, in that order; and Mr. Hughes may come up and begin.

At the end of that point, Representative Isaacson has asked us for permission to show a 3-minute movie on transportation tests to which everyone here is invited to stay.

Mr. Hughes, proceed.

STATEMENT OF RUSS HUGHES

Mr. HUGHES. My name is Russ Hughes. I'm up here speaking for myself. I'm on the Richland City Council, and I'd like to thank you, Senator Gorton and Representative Morrison, for the opportunity to speak. The item I'd like to talk about just very briefly has been addressed a little bit, and that is the impact on the communities. The city of Richland is not unique in a lot of respects. Most communities in the Nation today are running into shortages of funds that take care of normal operating costs of the city, but where Richland is unique—we have millions of dollars of investment to the north of us, in our business that created this city, Yet, the city is—no way can they touch that in any effective manner to support the operations of the city. If you compared Seattle with all the business that's located in the city, there's tax base that the city can depend on for those services. And I do hope that in this bill you will address that problem of the impact on the affected communities, whether it be Richland located here, or the rest of the Tricities, or any other place in the Nation. It's something that has to be looked at. We have to supply the same facilities to people, whether they work on the waste program or whether they work someplace else, and I do think that the fact that we can't tax it—you have to address that. Thank you.

Senator GORTON. Thank you very, very much.

Mr. Arndt.

Mr. ARNDT. My proposed testimony has already been covered very adequately by previous speakers. Thank you very much.

Senator GORTON. Well, thank you. And John Petty.

STATEMENT OF JOHN PETTY

Mr. PETTY. Gentlemen, my name is John Petty. I'm a Richland resident since 1974. I want to thank you for coming here to our part of the world and finding out that there are people that care. Myself, I am frankly disappointed that there are not more people speaking in behalf of what you're doing that are a part of this community and could speak to that effect.

I'd like to clarify that I'm speaking strictly as a civilian private person. I am qualified in some respects to speak on the whole program in that in 1974 I graduated from Oregon State University. My family is down there, and every time I go down there it's the same thing all over. I am a nuclear engineer. I am not ashamed of that. I feel it's an honor and a privilege to work at the projects at Hanford. I could be working anywhere else in the country, and—but myself, I see that what we're doing at Hanford is essential.

Back in the 1960's, when I first went to college at the University of Oregon, "The Power of the People" was a popular expression. Today, I hope that we could have a new meaning on that term, with electric power, power of energy, power to restore the economy to the people. There are people out here. We're not living there because we like to suck up to the Government dollars; we're here because we're committed and dedicated to working for something that we feel is better for the economy and the Nation as a whole.

The issues that were brought up by some of the previous speakers, the aspect of perhaps this testimony that was given of, "Let's not rush ahead into anything. We, for God's sake, don't want to make a

mistake and have not the best alternative." Well, then, on the other hand, how could we ever find out what a good alternative is unless we do proceed with a satisfactory alternative? There is a point in all projects, as they tell us in project engineering, where it's necessary to break the pencils of the engineers and the artisans and get on with the job.

As it were, there are other aspects of the testimony that I would like to comment on very briefly. That this issue of why is the Government intervening in what the people need and want? Well, when I went to high school and grew up and learned about function of government and the proper role of the citizens in the government is that it is there because something needs to have a intergrating force to do the things that the people either are unable or in some respects unwilling to take upon themselves. When I found out there is a great distinction between running around the University of Oregon shouting, "Down with the ROTC," or whatever, observing students there, myself being a member of the ROTC was in a considerable minority position, but I was keenly aware of the difference between what government and civilian is when I was drafted and sent to Vietnam, and there I learned a great lesson in life, that out in the jungle where you have ant hills—large ant hills about this big, maybe 10 feet across, I thought to myself, what a marvelous work this is. There's little holes down under here where the ants come in and out. They go get food, and they bring it and they survive. As a community, they work together to build something, and I looked all around the ant hill, but I did not see any ants trying to tear apart corners of the ant hill because they didn't like the way it was being built.

At Oregon State, the similarity is the beaver. As a resident growing up as a child of Oregon, we had a beaver dam. I like beavers. I liked the dam; we could go fishing, and there were redwinged blackbirds. It was not destructive of the environment. Myself, I consider myself an environmentalist and a nuclear engineer. I think the two things are intimately compatible. The idea of spent fuel storage intrigues me, because I realize that things must proceed a step at a time, but the issue—what we really should be looking at is, why aren't we reprocessing this fuel and confining that portion which the lady here so succinctly stated could be reduced down to a more manageable form, except that she didn't mention, and I may be out of line for saying so—excuse me, I'm not a Ph. D.—that the generally recognized expressions for what amount of half-lives are required to get down to a near background level is 10 half-lives, and not 20.

Since I came here to Hanford in 1974, I've seen things rationalized beyond belief. You're going to lose the interest of people like myself if these programs do not proceed on some reasonable basis. We're going to go off and sell used cars or anything. We'll get frustrated and leave. We'll decide that the people here don't deserve progress. That's not true, and I know it isn't, but I won't leave; but it is, in fact, quite frustrating to wonder why all of this has to happen. I'd say, trying to wrap things up here, that the last thing that we need is more studies of different alternatives. As Mr. Lee pointed out, we have probably destroyed one over times the number of national forests preparing paper on which to write more studies. It's simply incredible.

I applauded the lady when she said that she would be willing to come and testify on behalf of this if she had her way, and then I realized, what did she really say? If she had her way, all of us would

go to the unnamed, but everybody knows who, Federal agency where, when you send things, they just—they simply disappear. Well, I guess—I guess she could make such a statement safely. There are things that get sent off to Federal agencies that are never heard or seen of again. Simple proposals, 40 copies sent in twice and have been lost, and by the time the second submittal has gone in, the whole group has turned over and they don't know what's going on, and you've got to start over, I'm not making this up. It's a fact out of my job that I do at work. That's happened, and it's going to cost the taxpayers more and more until someone puts an end to it.

Yourselves being here is good. I applaud your interest and concern in coming in, and I'd like to thank you for coming to listen. The previous speaker said, "Well, you're not really addressing everything. You haven't covered this and this and this and this," but what I perceive your function here today is to gather information and listen. That, I respect. I would not come and try to say anything as far as the technical aspects, because as a B.S.-type person, I'm a worker bee, and not a theoretician, but I have found that it is so much more rewarding and enriching to do something that matters, and you can see what happens as a result, than to speculate as to what happens if you do this or that, or all of the other things.

The track record at Hanford has been brought into question. I found out about Hanford at school when—1972 or 1973 I think it was, a Dr. Bern Skinrad said, oh, yes, he left the school for a while and came up and said, "Yes, they've got some problems with the tanks," and, you know, for crying out loud, after all, they're about 20 years old. Well, of course, they're going to be leaking. It's the barrack buildings, the prefab buildings; of course, they're not going to be adequate beyond their intended design life. If someone wants a track record to look at that is successful, I suggest they go to France. They don't seem to have been torn apart by all of these doubts about what is the best way to go. They say, "Hey, here's a neat idea. Let's go do it; and it works, and so why not do it some more?" It's—there are so many books of technical information and data that it just becomes a brick wall. You cannot amass, assimilate, and then there is no computer probably big enough to describe all the things that go into heat that have to be considered.

Senator GORTON. I think you better summarize.

Mr. PETTY. I will summarize in that I think that reality is rearing its ugly head. The economy of the Nation and the State cannot be allowed to slide forever, and I submit that we should act as the people; we, the people, reasonably and soon, and that you, our representatives, are doing your best to do your job, and I applaud that; but time is of the essence. We have to get on with the job. The power of the people.

Senator GORTON. Thank you.

Ray, are you ready to go with your film?

Mr. ISAACSON. I would like to introduce Ralph Johnson to narrate.

Mr. JOHNSON. There seems to be a considerable interest in the transportation aspects of the waste problem, so this film has been submitted for your education to give you a little assurance that perhaps the system may be a little more reliable than you had initially thought.

Mr. GORTON. Thank you all for coming. The meeting is adjourned.

[Whereupon at 5 p.m. the hearing was adjourned to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

Testimony of Governor John Spellman
of Washington State
before the
Senate Environment and Public Works Committee Field Hearing

Federal Building
Richland, Washington
October 31, 1981

I am pleased to have the opportunity to present my views before the Environmental and Public Works Committee concerning Senate Bill 1662 which seeks to deal comprehensively with major issues relating to nuclear waste including finding, selecting, licensing and constructing a national waste repository for the disposal of high level radioactive waste produced by civilian activity.

I think that it is far past time for the Federal government to have in place a rational program to deal with the growing need to resolve the critical question of how this country will permanently dispose of the wastes from nuclear activity. The debate has continued in Congress and through successive administrations for many years, and the national interest is not being well served by longer delays. Consequently, I do strongly favor clear and logical action by Congress in resolving the key issues that have been debated far too long. Therefore, I am encouraged to see that Congress is continuing last year's effort to establish a national policy and program. It is more than timely; it is essential that appropriate legislation be adopted.

However, at the same time that I applaud the renewed examination of an acceptable approach, I must raise some questions pertaining to the schedule that is contemplated in S. 1662. While we have endured long delays in initiating the program, we, nevertheless, cannot rush pell-mell into a program to make up for lost time. The approved program must contain the elements that will allow for moving ahead on a reasonable time basis, with all necessary information, and with the cooperation and joint efforts of those states that will be both directly and indirectly affected. The focus of legislation should deal with the need for a permanent answer for the proper safe transport and disposal of high level waste in final repositories.

I am impressed at the scope of the bill. It encompasses many highly significant issues that must be resolved. The issues addressed are critical in terms of the continuance of many nuclear programs in this country. The bill, in my estimation, needs to reflect a greater confidence by the Federal government in the capacity of states to be responsibly involved in the process and that the public can make substantial positive contributions to assist in the carrying out of a national program.

Needed confidence by the public will probably not be achieved until we have, in place, a rational policy and program for dealing with

high-level radioactive wastes. This thought has been expressed many times. Its repetition, however, does not make it less valid.

Legislation must take cognizance of the need for state involvement at every step in the process in order that we achieve the objectives of having operational repositories at the earliest feasible time.

While, there may be some merit in attempting to determine one optimal site for a waste repository, I think it appropriate to consider and adopt a regional concept for the disposal of high-level wastes, similar to the legislation adopted by Congress in December of last year which calls for a regional solution for the proper disposal of low-level radioactive wastes. The impact of transporting high-level waste for thousands of miles from one part of the country to another does not appear to me to be a logical course of action. Therefore, I would recommend strongly that the legislation clearly include a requirement that no fewer than three sites be selected as national repositories and that further exploration and examination be conducted to ensure that a variety of geologic mediums be utilized.

Frankly, I am not thrilled with the schedule that is proposed in this legislation. As stated earlier, I think that we must move towards a solution more quickly than we have in the past. However, attempting to make the decision points called for in this legislation may not be possible, without substantial modification. Some time lines, which should follow in an orderly basis, have been compressed so that they are parallel rather than consecutive.

The state of Washington has strong interest and concern in the matter of nuclear wastes. We have been called the "Atomic State" at times in the past because of the many varied and important nuclear programs carried on at the Hanford Reservation in southeastern Washington. There are numerous programs, both civilian and defense, that have been carried on for many years. We have two nuclear reactors under construction there with a third recently put on a two-year "hold." An application for relocation of two other proposed nuclear power plants on the Reservation is scheduled to be filed with our state Energy Facility Site Evaluation Council for recertification. Obviously, the state has a strong stake in the outcome of a national policy and program for the disposition of our industrial, commercial, and defense wastes.

We do not want those decisions to be made for us. We expect to be ongoing participants in both the devising of a national policy in concert with other states, and in the carrying out of that policy and program.

Senate Bill 1662, if properly modified, can be a reasonable tool in setting forth both objectives and procedures needed to resolve this long-standing issue.

There are several aspects of the bill which I feel must be reworked in order to attain the objectives which are important for our state.

Site Designation

The tenor of the language contained in the legislation indicates that there will only be one site chosen for a national waste repository. A single site for all national nuclear civilian wastes is simply not enough. It is essential that a system of regional sites be established, with a minimum of three being clearly justified. The concept of regional sites for the disposition of low-level radioactive wastes as a key element in the 1980 Low-Level Radioactive Waste Policy Act should be considered as valid for the high-level waste program as well.

I think that a regional approach would minimize many problems, not the least of which is in reducing the transportation costs and risks. Establishment of one site does not reduce shipping and transportation costs and risks, it enlarges them. The magnitude of the problem that we face in resolving the site location should not be an insurmountable barrier in establishing of a national policy of regional sites. If more than one site is judged by Congress and the President as appropriate national policy, the bill should be amended to require more alternative sites than is proposed. It is difficult to interpret how more than one site could be designated under the language contained in S. 1662. I am concerned that no state should be a "target of opportunity," not Washington, not any other state. A final decision on sites must interrelate a number of considerations, technical, political, and practical. Simultaneous development of two or three regional facilities is not only good national policy, it is quite practical.

Timetable

There is a strong emphasis in the bill to establish a firm schedule for events to occur on a sequential basis, leading up to the approval of an application by the Nuclear Regulatory Commission for construction of a repository. The need for a definite schedule is obvious. It also appears to me to be obvious that the schedule proposed cannot be reasonably achieved.

The first date January 1, 1982, is the date on which the Secretary of Energy, after consultation with the NRC, EPA and the USGS must issue guidelines for the recommendation of sites for repositories. That is 61 days from today. By June 1, 1982, a recommendation must be made to the President, two sites that are suitable for site characterization based upon the guidelines. The two dates viewed in proximity to each other appear to be unrealistic. Since there is a subsequent requirement that an additional site be recommended for site characterization study six months later, by January 1, 1983, perhaps the recommendations on all three should be similarly scheduled.

Without prolonging comment on this aspect of the legislation, I feel that is is essential to have a workable timetable for the accomplishment of a national system of waste repositories. Additional work on a reasonable schedule may be advantageous. There are significant interests and concerns about how we move forward on this issue. I would feel more comfortable if we have in place an achievable schedule, which does not appear to require an unrealistic amount of activity into too short a time frame. That would not work to our advantage in reaching our goal. We must schedule the program with a full understanding of the complexities involved in identifying and resolving issues. I would not care to have decisions made on the basis of the pressure of time, if such decisions might result in designating sites that have already received considerable study, but which might not be the optimal sites for ultimate selection. Time pressures may well distort the careful reasoned decisions that ultimately must be made.

Role of the States

Adoption of a national nuclear waste program must include a substantial role for state governments. Strong participation by potential host states, states indirectly affected by the development of a repository program and states generating high-level wastes, is required for a successful program. Cooperation between states and the Federal government will enhance reaching national objectives, not jeopardize them.

I would not approve of a joint Federal-state process that merely treats states as entities that are informed of Federal actions taken or about to be taken. I support a process which, at the outset, brings the state in as an equal partner in the siting process.

Some elements of partnership appear in the language of S. 1662. A portion of the language in Title VII is concerned with state involvement and would require the Federal government to "negotiate an agreement with a potential host state."

Such an agreement should reach to all aspects of the proposed process. Again, the tone of the language appears to be reportive in nature, that is, the Federal agencies would need to inform the states of actions taken, or would register state objections. An agreement should create a working arrangement where there is continuous state involvement so that it is possible to track activities as they are planned, carried out, and evaluated. The use of such an agreement has merit in documenting responsibilities of both the state and Federal government. It should not be construed as final commitment, but as a working tool which reinforces the desires of both governments to secure needed information about all facets of the program.

There is one specific concern that I have relative to how state objections might be resolved by Congress. S. 1662 provides that if there are objections by a state to the plan of the Department of Energy,

that one House of Congress would have to uphold the state within 60 days. I feel that the formula needs to be turned around so that the Federal plan, whether there is objection by the state, should have the support of both houses of Congress. The burden of proof as to the reasonableness of a DOE plan should be on their shoulders and not on the states.

I am pleased to see the interest that the bill shows in early communications and continuing interaction with states, and if strengthened, the carrying out of a firm agreement will assist in the attaining of a satisfactory waste management program.

Test and Evaluation Facility

S. 1662 calls for the development of a test and evaluation facility which is to be operational by January 1, 1988. The objective of having such a facility to demonstrate the feasibility of a proposed plan for packaging, handling, and disposing of high-level wastes is appropriate. However, I wonder about the utility of such a project, since elsewhere in the bill the schedule for licensing a repository requires that the NRC act on its first application by the same date, January 1, 1988. I would think that if, indeed, the test and evaluation facility is constructed that it would be both necessary and appropriate that we have information and data as a result of the facility's operation which would become part of the developmental plan for the final plan to develop a repository.

I have heard some comment that the development of a test and evaluation facility could be utilized as a shortcut to establishing a final repository site. Frankly, given the limited information which could be gained from such a project prior to the licensing of a repository under the proposed schedule, I question what role would be served by the project. Some substantial revision of the T/E concept appears to be necessary before any legislation is finally adopted.

Waste Classification

One of the unresolved issues arising from previous Congressional debates concerning high-level wastes, has been the distinction between wastes created by civilian as contrasted by defense activities. I am perplexed as to why the distinction has assumed such importance. Obviously, we need to be concerned about the security implications of our national defense capability. But the wastes from defense actions is still waste and causes the same health, safety, environmental and political considerations as wastes derived from civilian power plants and other programs. Recognizing that it is a complex issue, I would suggest that some means be found to enable states to deal with the totality of the waste question, not just a part of it. We must deal with the wastes on a comprehensive basis, not in fragments, and I would hope that whatever legislation finally emerges from the legislative process recognizes this need.

Conclusion

I am encouraged by the desire of Congress to again address the critical issue of dealing with the nuclear waste issue. We must move forward in resolving the difficult technical, political and social issues that have arisen. Our state has had substantial experience in dealing with many aspects of nuclear activity over many years and can contribute an array of knowledge and insight that can be useful. Our state is ready and willing to work with Congress, DOE, NRC, other Federal agencies, and states in working out reasonable and rational solutions.

The action of Congress last December in passing a part of the nuclear waste program dealing with low-level wastes was an important beginning. It demonstrated the confidence that Congress had in establishing a national policy charging states with the responsibility of solving low-level waste questions through a system of regional sites and compacts. Considerable action in all parts of the country has taken place since the passage of that legislation. Here in the Northwest, the states of Washington, Idaho, and Oregon along with Utah actually have created this country's first regional compact to deal with the low-level waste questions. I think that Congress can feel confident that with a significant, substantive role for state governments, that the solving of one of this country's most persistent and difficult issues will come more quickly. That authority and responsibility was important and serves as a useful platform from which to fashion an appropriate structure for building a satisfactory high-level waste solution. With lead responsibility resting with the Federal government and with continuous interactions among states through a substantive consultation and concurrence process, I am confident that an acceptable policy can be both designed and adopted by Congress in the next few months.

Testimony of

John V. Evans

Governor of Idaho

Before the

Committee on Environment and Public Works

United States Senate

Richland, Washington

October 31, 1981

Mr. Chairman, Members of the Committee:

As Governor of Idaho and as chairman of the Nuclear Power Subcommittee of the National Governors' Association, I am pleased to be given this opportunity to address the proposed National Nuclear Waste Management Act of 1981. The issue before you is one of critical importance to citizens of Idaho and to my fellow governors.

I would like to begin by commending Senator Gorton, Chairman Stafford, Senator Simpson and the other members of this Committee, as well as Senator McClure and the other members of the Committee on Energy and Natural Resources for the effort and study both Committees have devoted to developing S.1662. The fact that your two committees worked together to develop this bill jointly is a very positive indication of your commitment to achieving final action on nuclear waste legislation this year. The governors have been urging passage of comprehensive nuclear waste legislation for many years, so this is indeed a welcome prospect to us.

Idaho has played an important role in the development of nuclear technology. It has been a quarter of a century since Arco, Idaho became the first city in the world to have its electricity provided by nuclear power. Since that time, the National Reactor Testing Station, now known as the Idaho National Engineering Laboratory, has made many contributions toward improved reactor safety, to development of nuclear waste

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management techniques, and to our national defense nuclear programs. We have a real stake in the future of nuclear technology. But we recognize that the lack of public confidence in the ability to safely isolate highly radioactive wastes is one of the greatest threats to that future. Clearly then, it is time to establish a national policy and program for the disposal of high-level waste, so that public confidence can be restored, and nuclear technology can move forward.

I would like to turn now to some of the specific provisions of S.1662.

State Participation

One aspect of the bill that is before you that is of particular interest to the National Governors' Association is the state participation policy in Title VII. Four years ago, our position as governors was that the states should have an absolute veto over major nuclear waste facilities to be located within their borders. Since then we have recognized that no state should be allowed to unreasonably impede the national interest. However, we continue to maintain that federalism principles dictate that the states should be equal partners in a decision as sensitive as siting a nuclear repository. To achieve that partnership, we urged the adoption of a "consultation and concurrence" process in lieu of an absolute state veto. The consultation and concurrence provisions in Title VII very closely approximate the National Governors' Associ-

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ation policy in this regard.

The cooperative state-federal agreements provided for in Section 701 should go a long way toward establishing an orderly framework for consultation and conflict resolution throughout the siting process. However, I would suggest you consider allowing the states the option to initiate negotiations with the Department of Energy prior to Presidential approval of a site for characterization. Some states may desire this flexibility, and little is gained by forcing them to wait for the site characterization decision before they can proceed.

We strongly endorse the concept of Congressional review of state objections to a siting decision, as provided in this bill. But the governors and the State Planning Council have recommmended a procedure by which the Department of Energy is required to gain Congressional approval in order to override state objections, rather than placing the burden on the objecting state to persuade either House of Congress to support its objection. If the Department of Energy has carried out its program properly, it should not be that difficult for it to obtain the assent of both Houses of Congress. But we strongly feel this burden of persuasion should be on the Department, rather than on the state.

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However, the critical element in our view is the assurance that Congress will be the forum for resolving state objections, and we commend the authors of S.1662 for adopting this approach. We would urge a similar approach for resolving such objections to the siting of an Away-From-Reactor (AFR) spent fuel storage facility. The Presidential override contained in Title IV is not viewed by the governors as adequate protection of the states' interests.

Emphasis on Disposal

The governors have taken the position that the primary focus of national nuclear waste policy should be on providing facilities for the permanent disposal of high-level waste and spent fuel. Interim measures to provide adequate storage of wastes and spent fuel will continue to be necessary pending the availability of a permanent repository. But we should not allow such temporary measures to become the de facto final solution by diverting attention and resources from the effort to provide permanent disposal. I believe this philosophy is reflected in Section 501, wherein it is declared that long-term storage of high-level waste and spent fuel shall not constitute an alternative to disposal in a repository. I would urge you not to retreat from this subordination of retrievable storage to the establishment of a permanent repository.

In this same vein, the National Governors' Association supports the concept of a Congressionally-mandated timetable for the establishment of a respository, as provided in this bill. But while a rigorous chronology is advisable, the governors insist that it not be at the expense of the technical conservatism required for a successful program. The failures at other nuclear waste facilities ---both high and low-level---have created an unfortunate legacy of mistrust. The schedule for site selection must allow for thorough investigation of each candidate site in order to avoid another such failure. I fear the time frame set out in S.1662 may compel the Department to select those sites which have already received extensive study, whether or not they are the most promising sites on a national scale.

Impact Assistance

I would also call your attention to the issue of impact assistance. Quantifiable fiscal impacts on a community and a state due to the construction of a repository should be compensated. The cooperative agreements contemplated in Title VII of this bill could provide for such assistance. The governors would support authorization of such compensation from the fund established under Title VI as part of the full cost of the facility meant to be covered by the user fee.

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Defense Waste

Other than noting that nuclear wastes from defense programs have been accumulating for more than thirty years, S.1662 is silent on the subject of defense waste facilities. We governors recognize that disagreement over the extension of state participation provisions to defense waste facilities was a major factor in derailing last year's nuclear waste bill. At the risk of further complicating an already complex issue, I would remind Congress that as far as states are concerned, defense wastes pose the same health, safety, environmental, and political issues as civilian wastes. As governors, we appreciate the unique national security issues related to defense bases and weapons facilities. But nuclear waste discarded by defense programs would seem to occupy a different category than other defense activities. The National Governors' Association urges you to resolve the national security and procedural questions that now prevent a greater state role in the disposal of military waste.

Conclusion

Last year the states worked diligently with Congress to secure passage of the National Low-Level Radioactive Waste Policy Act. I am happy to report to you that all regions of the country are actively engaged in carrying out the mandate

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of that Act. Four states in the Northwest have already entered into a low-level waste compact pursuant to that Act. The states welcome the opportunity to play a more active role in the management of nuclear wastes. We are gratified with the access to, and cooperation with the Congress we have experienced thus far in this area.

We heartily concur with the finding contained in Section 101 of the bill before you, which states..."a successful nuclear waste management strategy requires the full participation of State and local officials, Indian representatives and the public in a step-by-step, technically sound program to promote public confidence in the safe disposal of nuclear waste..." I believe by their response to the Low-Level Waste Policy Act, the states have demonstrated their ability and willingness to act as full and responsible partners with the federal government toward solving this urgent problem. The authors of S.1662 are to be commended for the recognition of the strong and constructive role the states should play in this process.

TESTIMONY ON S. 1662 GIVEN AT RICHLAND, WASHINGTON ON OCTOBER 31, 1981 BEFORE THE UNITED STATES SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

1. I am Michael W. Gendler, an attorney in private practice with offices at 654 Colman Building, Seattle, Washington, 98104. In my law practice, I represent the Don't Waste Washington Legal Defense Foundation, which is appealing to the Ninth Circuit Court of Appeals to defend the validity of Washington Initiative 383, which was enacted in Novemer, 1980 to limit import of low-level radioactive wastes into Washington. I previously represented Skagitonians Concerned About Nuclear Plants, an intervenor before the Atomic Safety and Licensing Board in administrative proceedings concerning a proposal to build two nuclear generating facilities in Skagit County, Washington. I have represented Friends of the Earth and other environmental organizations with respect to issues unrelated to nuclear waste disposal. I am testifying before this Committee on my own behalf, and not in the course of my representation of any persons or organizations.

2. As is recognized in the bill before the Committee, and in the statements of Senator McClure, prompt development of a safe and efficient Federal program for the disposal of nuclear wastes from civilian activities is essential to the future of nuclear power. The nature of spent fuel and other radioactive wastes requires the federal government to assume control and responsibil-

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ity for their storage and disposal. At the same time, the cost of storage and disposal, and of developing the technology to accomplish this, is the responsibility of the owners and operators of civilian nuclear powerplants.

3. S. 1662 incorporates these basic concepts, and therefore should receive serious consideration by the Committee. The following points are offered to suggest amendments which can enhance the bill's ability to achieve its purposes.

a. Recovery of costs. The provision in the bill for a one-time payment to the Government by utilities for the use of storage facilities does not adequately insure the Government's ability to recover the full cost of developing and operating these facilities. If the costs escalate in an unforeseen manner, either the Government will not recover them, or utilities seeking to use the facilities in later years will be required to subsidize previous use of the facilities by other utilities. To avoid this possibility, a provision allowing appropriate adjustments to contracts as the full costs of managing radioactive wastes are learned should be included.

One excellent feature of S. 1662 is that the Government will receive from the utilities the revenues to be applied for development and operation of the facilities prior to the time when actual expenditure need be made. This feature enhances the probability of full recovery of the actual costs by the Government.

b. Interim storage sites. The bill now envisions construction of "at least one facility for the interim storage of spent fuel from civilian nuclear powerplants." To the extent that any interim federal facilities are required, the bill should be

amended to reflect a federal policy to develop at least two interim storage sites. The sites should be located to minimize transportation distances from powerplants to the sites.

If there is only one interim site, the transportation distances from further reaches of the nation may present more serious safety risks than those associated with the storage of the spent fuel. The bill's emphasis on testing and evaluation is designed to assure the safety of any storage facility. But the bill does not provide similar assurances with respect to transportation of spent fuel. Any policy which would result in a significant increase in transportation of spent fuel should be adopted only after development of safeguards providing assurances for safe transportation of the increased quantities of spent fuel.

The difficulties suggested above will be much greater if one interim storage site is located in a corner of the country. The bill should be amended to require the Secretary to give substantive consideration and value to potential sites which are centrally located, in order to minimize transportation distances.

The Committee should be reluctant to recommend increased on-site storage at civilian nuclear powerplants, even on a temporary basis. Many of the nation's nuclear powerplants were approved by Atomic Safety and Licensing Boards with strict conditions limiting the quantities of spent fuel to be stored on site. Proposals by the utilities to expand on-site storage capacity have met with vigorous opposition from residents and citizens' groups. Expanding on-site storage, even on a temporary basis, will be viewed by many citizens as a breach of the conditions under which the powerplants originally were licensed. Moreover, such a step will under-

mine public confidence in the ability of utilities and the federal government to develop a permanent spent fuel storage and disposal system, and will be seen as an "easy way out" method of avoiding the waste problem. Accordingly, provisions precluding or limiting hearing on proposals to expand on-site capacity and review of decisions approving such proposals should be deleted from the bill, except where a formal finding is made to the effect that operation of the powerplant will have to be terminated, unless on-site storage capacity is expanded. Even then, there must be adequate safeguards to assure that expansion of on-site storage capacity is consistent with the standards in the Atomic Energy Act.

c. State role in the program. The bill recognizes the need for "improved consultation and cooperation between the Department of Energy and States and localities concerning Federal storage and repository siting and development activities." But the bill's provisions for consultation and concurrence are not sufficient to enable the states to present their concerns, and assure the health and safety of their citizens. No program for federal storage and disposal of wastes can gain full public acceptance if it does not have the acceptance of the state most affected by the federal program. The bill should be amended so that the approval of the state legislature is required as a pre-requisite to a final decision locating a federal storage site or repository in that state. Alternatively, a procedure analogous to the "consistency" procedure employed in the Coastal Zone Management Act, 16 U.S.C. §§ 1451-64, should be inserted in the bill. Section 307 of the Coastal Zone Management Act prohibits activities inconsistent with the State Coastal Zone Management Program unless the Secretary of

Commerce determines that overriding national interests require approval of the inconsistent activities. The Secretary has promulgated regulations which enable a state or the proponent of the inconsistent activity to obtain review from the Secretary of the state's consistency determination, or from a determination to override the consistency determination based on national interest. These regulations include provisions for negotiation and formal mediation. Most important, the regulations assure that no actions prejudicial to any interests will be taken until the state's concerns are addressed fully by the Secretary.

A similar statutory scheme would give the states far better ability to protect their interests and the health and safety of their citizens, while preserving to the federal government the ultimate decision as to siting of storage and repository facilities, and to act contrary to one state's interests where overriding national considerations so require. Under the present bill, the Governor may notify the Secretary of a state's objections to a facility, and the Secretary is required to suspend further work pending a determination by the President or Congress. However, unless the President or Congress acts within a specified short period of time, the Secretary's previous decision to proceed becomes final. The results of such a procedure are the delay in implementation of a project, without any assurances that the Governor's objections will receive serious consideration and action.

Past experience indicates that citizens of a state will react strongly to the perception that the state's interests are being ignored, and the state's citizens' health and safety not protected, when the national interest is invoked as justification

for placing unique burdens on the citizens of that state. While the provisions requiring early consultation and coordination with the states are encouraging, the bill should be amended to provide an affected state with an actual voice in the decision to locate a facility in that state, and to insure meaningful review of a decision likely to be perceived adversely by the citizens of a state.

The bill presently provides for consultation only with the state in which a facility is to be located. However, other states may be affected almost equally with the site state, either by significant increases in spent fuel transportation, or by the proximity of a repository to a neighbor state's borders. The bill should provide for active consultation and cooperation with these other states, as does the Coastal Zone Management Act include all affected states, and not merely the state in which the coastal activity takes place, in the consistency process.

The bill does not give the states a sufficient role in the siting of storage and disposal facilities. After the Secretary has determined that a particular area is a promising one for development of a facility, the state should be given an active role in the precise location of the facility. Such a scheme would take greater advantage of knowledge of an area at the state level, would assist in minimizing environmental and other adverse impacts, and would improve public receptivity to the facility. The Ninth Circuit Court of Appeals has concluded that the states do have power to determine the location of nuclear powerplants for environmental and economic purposes. Pacific Legal Foundation v. State Energy Resources Conservation and Development Commission, ___ F.2d

___ (Nos. 79-3365, 79-3382 Oct. 7, 1981). The role of the state should be at least as great with respect to the siting of storage and repository sites.

Consideration of financial impact to the states is entirely absent in the bill. Yet a decision to locate a facility within a state almost certainly will entail significant costs, some direct and others less apparent, to that state and its citizens. One direct cost will be additional costs incurred in maintenance and operation of the highways which will receive significant additional traffic in wastes, and the resulting wear and tear of the roads. An indirect cost is the loss of use for another purpose of a site selected as a facility, and the possibility of loss of tax income to the state. Damage to the state's environment is another inevitable result of locating a major facility in the state.

An accident at a facility or in transportation would be disastrous. If the Three Mile Island accident is any indication, the costs would be enormous. A federal fund should be established to anticipate such an accident, and provisions made for compensation to the state and to its citizens affected by the accident.

An accident fund could be combined with an impact fund which could be used to compensate the state and its citizens for the costs to the state incurred in connection with development and operation of the facility.

Finally, the utilities in a state in which the facility is located should be exempt from the mandatory fee required under section 603(a) of the bill.

d. Test and evaluation facility. Development of the test and evaluation facility should not be exempt from the NRC

licensing process, and should not be exempt from the National Environmental Policy Act. As a practical matter, and especially in view of the large expenditures which will be required to develop the test and evaluation facility, it is very probable that the test and evaluation facility will become the first long-term permanent disposal facility in the nation. The expenditure of funds itself will create significant pressure to continue use of the test and evaluation facility for long-term storage or permanent disposal. The decision to locate a permanent waste storage facility is perhaps the most significant one to be made under the bill, and it should not be made by default because of previous decisions.

For this reason, it is especially inappropriate to exempt the test and evaluation facility from the licensing requirements of the NRC and the provisions of the National Environmental Policy Act. Because the initial determination of the location for the test and evaluation facility may be the most significant decision made under the bill, it is this decision which must be subject to the most careful scrutiny possible.

For the same reason, a significant and substantive state role is essential in development of the test and evaluation facility. Public reaction to the entire program will be especially adverse if the public perceives that a permanent disposal facility decision is made on the basis of a prior decision which short-cut proven licensing procedures, and which eliminated state participation.

Accordingly, the site state should have substantive authority with respect to the location of the site and imposition of appropriate conditions to address environmental and economic impacts

of state or local concern. Development of the facility should not be undertaken until approval is obtained from the state legislature (or, alternatively, until the state's objections have been fully resolved through a mediation process).

The process of obtaining state approval can be expedited through incorporation into the NRC licensing process. Present NRC licensing rules give the state the right to intervene as a party in licensing proceedings. But this process will be meaningful only if the test and evaluation faciiity is fully subject to NRC licensing requirements, including the requirements for public hearings, as indeed a proposal of such major importance should be.

e. National Environmental Policy Act. The bill in several places exempts development of facilities and other proposals from the requirements of the National Environmental Policy Act. While these exemptions may be appropriate if there are alternative mechanisms for insuring thorough consideration of the environmental and other impacts of the proposal, one difficulty with the exemptions, as written, is that it is the early development of the proposal which is exempted. One of the major purposes of the National Environmental Policy Act was to encourage early identification and consideration of potential adverse impacts and alternatives. By exempting early activities under this bill from NEPA, this major purpose of NEPA is defeated. Deferring consideration of alternatives until after a final decision has been made serves little useful purpose. If any exemption from the requirements of NEPA is appropriate, such an exemption should come at a later, rather than earlier stage in the development of the proposal.

Early consideration of alternatives is essential with respect

to any proposals regarding a test and evaluation facility, in view of the probability of eventual long term or permanent use of the test facility as a storage or disposal site.

4. I thank the Committee for the opportunity to appear before it, and I hope that my testimony is useful to the Committee in its work on this bill.

DATED this 19th day of October, 1981.

Respectfully submitted,

Michael W. Gendler

MICHAEL W. GENDLER

STATEMENT OF ALEX G. FREMLING

MANAGER, RICHLAND OPERATIONS OFFICE

U. S. DEPARTMENT OF ENERGY

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

U. S. SENATE

AT RICHLAND, WASHINGTON

OCTOBER 31, 1981

I am pleased to appear before you today to comment on Senate Bill 1662 as it relates to the Basalt Waste Isolation Project at Hanford.

As Manager of the Richland Operations Office I am the senior onsite Department of Energy official responsible for the Basalt Project. I note that Dr. Shelby Brewer, Assistant Secretary for Nuclear Energy, recently provided a statement of the Department's position regarding the policy implications of the bill. In my statement I will discuss how we are organized to implement the Basalt Waste Isolation Project at Hanford; I will identify the major project participants and provide some general comments on the implications of Senate Bill 1662 for the Project.

As an attachment to my prepared statement I have included a chart showing the organizational relationships of the Hanford participants in the Project. You will note that the Department has the overall responsibility for the work, with Rockwell Hanford Operations being the responsible onsite operating contractor. In this capacity, Rockwell provides a day-to-day technical direction of the effort. Dr. Raul Deju is the Project Manager for Rockwell.

The architect engineer for the Project, including design of a repository, is a joint venture of Kaiser Engineers/Parsons Brinckerhoff Quade and Douglas, Inc. We have not yet selected a construction manager for the exploratory shaft, and potential follow-on activities.

In his statement delivered earlier this month in Washington D. C., Dr. Brewer summarized the current Department of Energy nuclear waste management program. As he stated, this program seeks to identify three specific geological repository sites at which construction of exploratory shafts to depth will begin by 1983, to be completed by 1985. The three locations will likely be: in basalt flows on the Hanford site; in welded volcanic tuff on the Nevada test site; and, in a salt formation site to be determined by 1983. Following examination of the three sites at depth, selection of one of the three sites will be proposed for the development of a Test and Evaluation Facility. This is currently scheduled for 1985. Parallel work on detailed site characterizations, necessary before a decision can be made on determining the site or sites to be used for a full-scale licensed repository, will continue at all three sites. A license application for the first repository is scheduled to be submitted to NRC by 1988, with operation to begin in the 1999-2006 timeframe. The repository would be capable of accepting spent fuel in addition to solidified high-level waste.

The Test and Evaluation Facility will develop waste emplacement technology. The Facility will be designed for the placement of up to two to three hundred packages of high-level waste. The package will incorporate multiple barriers, will be completely monitored, and will be designed for

retrieval. Methods for handling large quantities of waste packages will be developed. This technology will be used in the licensing process whether or not the first waste repository is located at the site of the Test and Evaluation Facility. Further, it will demonstrate on a practical basis that high-level radioactive wastes can be handled and stored safely. If estimates are correct, radioactive materials could be emplaced in the Test and Evaluation Facility by 1989.

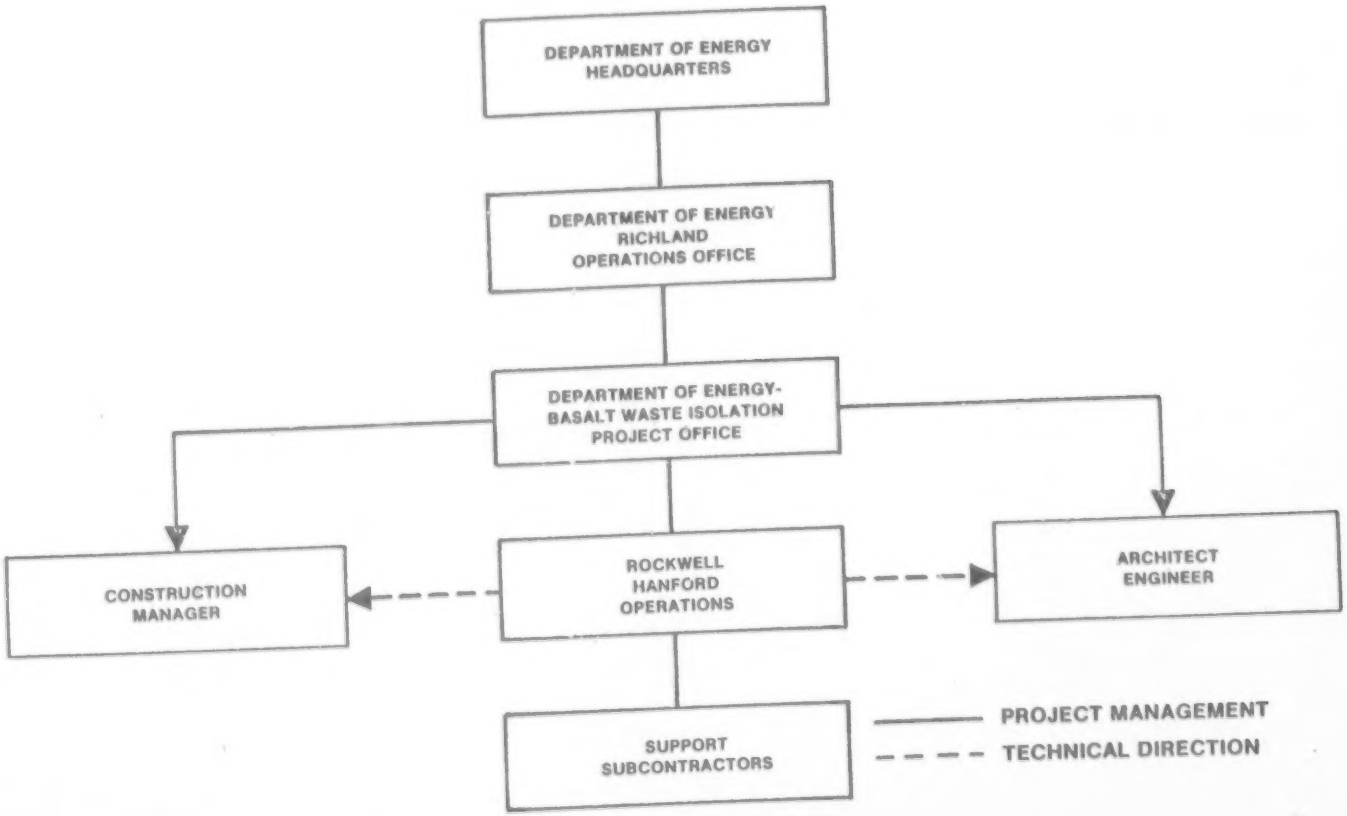
Basalt then, represents one of the three alternative geologies being explored. In our Basalt Waste Isolation Project, we presently have extensive geologic and hydrologic characterization efforts underway with the work being conducted from the surface. The exploratory shaft to be constructed during the period from 1983-1985 will permit access by geologists and hydrologists to the media of interest (at depth) for additional characterization testing. This will give us confirmatory data on studies already conducted at shallow depths.

The Richland Operations Office and Rockwell have only considered impacts on present schedules based upon the information provided in Senate Bill 1662. Certainly, some acceleration is possible. But to answer the questions of whether and how the milestones proposed in the bill can be met would require more precise and detailed analyses of the bill's provisions, the availability of resources, and review of technical limitations. Clearly, however, the schedule in the bill will allow less time to accomplish all of the activities involved in the development of a repository, thereby potentially affecting the

quantity and quality of the data and analyses which will result. This could in turn also impact our ability to work with NRC and the states and could complicate, rather than facilitate these activities.

In summary, our job at Hanford under the Basalt Waste Isolation Project, whether under the present program or under the provisions of 1662, is to determine whether or not it is technically and operationally feasible to use the basalts as a repository. We still have work to do and issues to be resolved, but thus far we have found no bases to indicate that the basalt is not acceptable.

BASALT WASTE ISOLATION PROJECT
ORGANIZATIONAL RELATIONSHIPS



STATEMENT OF DR. RAUL A. DEJU
DIRECTOR, BASALT WASTE ISOLATION PROJECT
ROCKWELL HANFORD OPERATIONS
BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U. S. SENATE
OCTOBER 31, 1981

Mr. Chairman, I appreciate this opportunity to appear before you today in this hearing on Senate Bill 1662. My comments will cover three topics. First, I will present some general and technical background on the Basalt Waste Isolation Project and its relationship to the National Waste Terminal Storage Program. Second, I will address how the Basalt Waste Isolation Project would have to be restructured to meet the goals of Senate Bill 1662. Finally, I will offer some concluding comments regarding the proposed Bill.

Basalt Waste Isolation Project

The U.S. Department of Energy's National Waste Terminal Storage Program was initiated in 1976 to integrate all activities related to feasibility studies to evaluate various locations within the United States as sites for potential nuclear waste repositories. Under the current program, a repository location or locations will ultimately be selected from among those studied in three geologic media: basalt, volcanic tuff, and salt. The Office of Nuclear Waste Terminal Storage Integration of Battelle Memorial Institute is the integrating contractor of the National Waste Terminal Storage Program. The Basalt Waste Isolation Project is a component of this Program.

The Hanford Site, located in southcentral Washington State, has been actively used for nuclear activities since 1942. Since 1976, under its contract with the U.S. Department of Energy, Rockwell Hanford Operations has been active in assessing the feasibility of using the deep basalts beneath the Hanford Site for the terminal storage of nuclear waste.

A repository constructed in the basalts underlying the Hanford Site would depend on the isolation characteristics of the basalts complemented by an engineered waste package to afford the containment required to assure isolation of the nuclear waste.

During the past five years, extensive site characterization studies, waste package investigations, and repository design studies have been conducted as part of the Basalt Waste Isolation Project. Particular emphasis has been placed on the study of the groundwater regime beneath the Hanford Site since the main pathway that could serve for transporting any radiocontaminants from a basalt repository to the accessible environment is the groundwater that may exist in strata above or below the repository layer. Therefore, it is essential that we have a comprehensive understanding of the hydrologic characteristics of the strata beneath the Hanford Site. Equally important is the computer modeling of the transport potential from a nuclear waste repository in basalt to the accessible environment.

In addition to addressing the issue of hydrology, the Basalt Waste Isolation Project has also conducted research to address other key issues such as the nature of the seismic setting of the Hanford Site and the behavior of basalt when subjected to thermal stresses resulting from the emplacement of nuclear waste. This last topic has been addressed in an extensive field testing program at a Near-Surface Test Facility within the Hanford Site. This facility consists of about 3,300 feet of tunnels and has been used for testing using heaters to simulate the emplacement of nuclear waste.

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Engineering studies which have been conducted to date as part of the Basalt Waste Isolation Project include research on possible waste packages and the environment they would have to survive and the conceptual design of a basalt repository.

The Basalt Waste Isolation Project studies conducted to date are being summarized in the Site Characterization Report presently being written for transmittal to the Nuclear Regulatory Commission in late 1982. As a result of these studies and based on data collected and analyzed thus far, the following statements can be made:

1. We are now focusing our siting studies on the central part of the Hanford Site. This reference location, covering approximately 18 square miles, appears to meet the basic criteria proposed in the Nuclear Regulatory Commission's 10 CFR 60.
2. The Umtanum horizon within the Grande Ronde Basalt of the Columbia River Basalt Group has been identified as the reference repository horizon (about 3,500 feet below ground level at the reference site). This layer is thick (approximately 210 feet at the reference site), very dense, and laterally continuous.
3. The geochemical environment established in a repository in the Umtanum horizon is highly favorable. Conditions in the basalts favor the stability of metal waste form containers and decrease the solubilities of many radionuclides to the point where hazardous nuclides are kept below Environmental Protection Agency limits in the accessible environment without a complex waste package.

4. The basalts are stable under the imposed thermal regime of a nuclear waste repository, and are capable of retarding the transport of many radionuclides to the accessible environment.
5. Individual basalt layers, especially in the Grande Ronde Basalt, possess very low water transmitting capacity. Such a characteristic would imply a very slow movement if radionuclides were to be released from a nuclear waste repository. Preliminary results of studies to find the age of waters entrapped in some basalt layers indicate that some of these waters could be as much as 100,000 years old, thus substantiating that groundwater in any deep water-bearing horizons travels at an extremely slow rate.
6. The central portion of the Umtanum horizon is devoid of moving groundwater.

In summary, while we still have an aggressive research program under way, based upon the comprehensive studies conducted thus far, we have encountered no evidence that would preclude continuing to investigate basalt as a potential repository medium for the terminal storage of nuclear waste.

The results of past research and development studies and plans for further studies within the Basalt Waste Isolation Project have been the subject of extensive review by technical committees, including the National Academy of Sciences. Three public information meetings on the Basalt Waste Isolation Project were held in 1980 in Richland, Seattle, and Portland, and three technical information meetings have been held in Richland. Liaison with the State of Washington has been maintained through a joint U.S. Department of Energy-State of Washington working group during both the former and present state administrations.

Studies remaining to be conducted to fully assess the feasibility of constructing a safe nuclear waste repository in basalt include:

1. resolution of remaining geologic and hydrologic issues and studies to obtain data required for repository design through implementation of an extensive subsurface exploration program at the reference repository site;
2. waste package studies to optimize the configuration of the waste package to be used and to assess the behavior of various materials which may be used in waste packages; and
3. upgrading of the present repository conceptual design.

Senate Bill 1662

If Senate Bill 1662 is enacted, it would require some restructuring of present and projected Basalt Waste Isolation Project activities. Table 1 compares some key dates identified in the Bill to comparable dates in the present and projected Basalt Waste Isolation Project schedules. As you can see from this table, the present program is keyed toward the first decision being in September 1985 when the U.S. Department of Energy selects one site for a test and evaluation facility, while the program as proposed in the Senate Bill introduces some earlier dates for formally recommending sites for detailed characterization and a more structured process of decision making.

Figure 1 shows the present Basalt Waste Isolation Project program and Figure 2 shows the proposed program under Senate Bill 1662 in regard to the timing of research and development activities, exploratory shaft construction, construction of a test and evaluation facility, and repository development.

TABLE 1. COMPARISON OF PRESENT BWIP PROGRAM AND DATES REQUIRED BY SENATE BILL 1662

	Senate Bill 1662	Milestones Present and Projected Program
EPA standards for offsite releases promulgated	1/1/82	10/1/82 (tentative)
DOE secretary in consultation with NRC issue general guidelines for the recommendation of sites for repositories	1/1/82	-
DOE secretary recommends two sites for characterization to the President**	6/1/82	-
Site Characterization Report/ Environmental Assessment - (includes plan for the exploratory shaft program) submitted to NRC for information and comment	10/1/82*	10/1/82
DOE secretary recomends a third site for characterization to the President**	1/1/83	-
NRC technical criteria for review of an application for construction of a repository, for a license to emplace waste, and for a license amendment to decommission a repository promulgated	1/1/83	10/1/82 (tentative)
Select one site for a Test and Evaluation Facility. Proposal to Congress	1/1/83	9/1/85***
Select at least one site for a repository	1/1/85	3/1/90+
Submit repository license application	4/1/85	9/1/92
Complete national geological surveys	1/1/86	-
Begin operations of a Test and Evaluation Facility	1/1/88	12/1/90
NRC issues a decision on the repository construction license application	1/1/88	10/1/96

*Need date not identified in the Bill. Date required to achieve the intent of the Bill's provisions.

**Public meetings required prior to this date. The Governor of the State in which the site is located and the Tribal Council of any affected Indian Tribe to be advised prior to this date.

***Detailed design to be completed prior to this date. This date represents the NWTS decision.

+Submit Schedule 44 for repository design and long lead procurement.

FIGURE 1. CURRENT BWIP PLANNING SCHEDULE

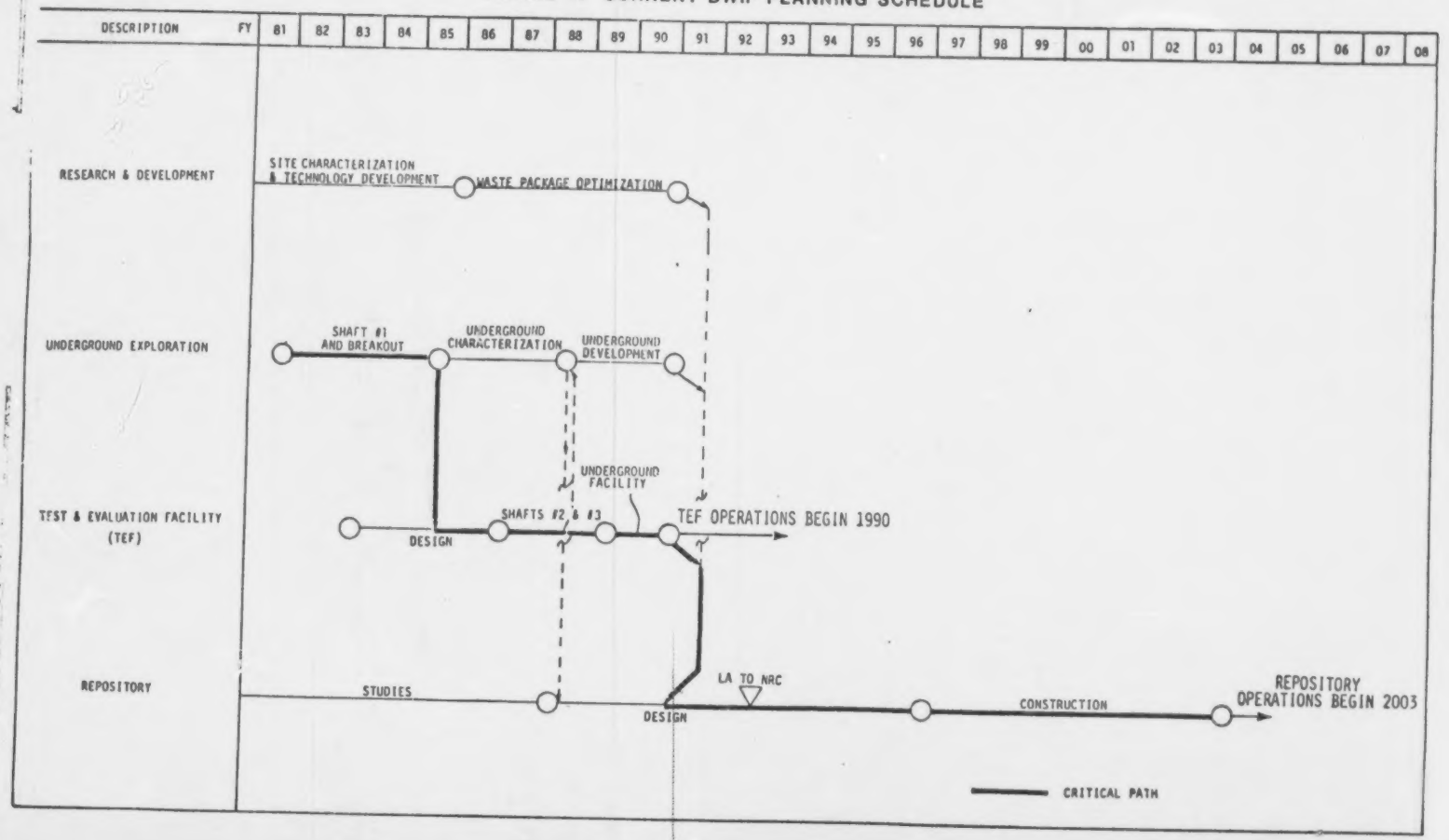
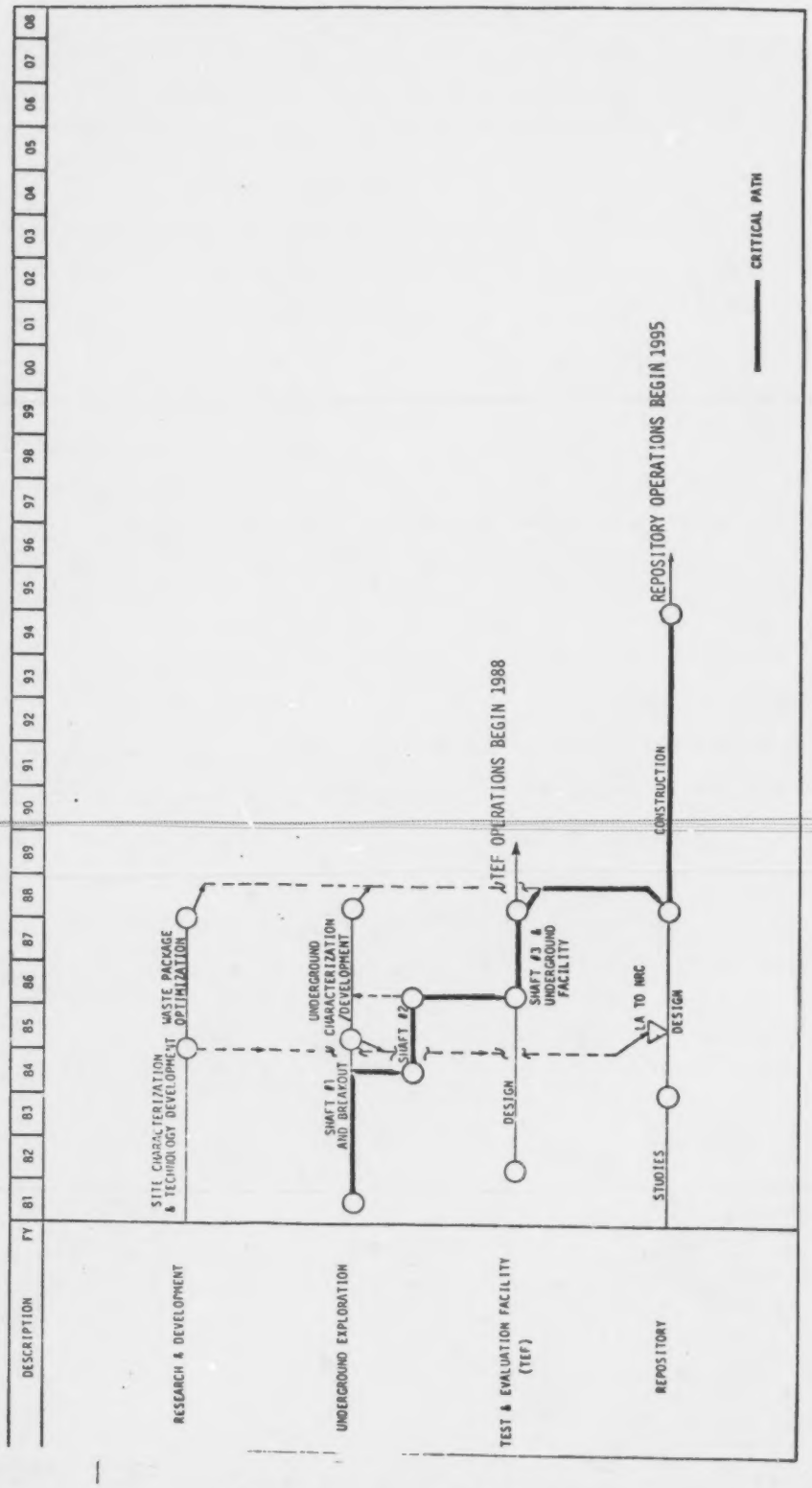


FIGURE 2. BWIP SCHEDULE TO CONFORM TO SENATE BILL 1662 GOALS



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To achieve the goals of Senate Bill 1662 as shown by comparing Figures 1 and 2 requires:

1. Accelerating completion of site characterization and technology development studies required for a license application;
2. Submitting an early license application using input only from site characterization and technology development activities and preliminary underground exploration, but no input from waste package optimization studies, subsequent underground exploration and the test and evaluation facility.
3. Starting design of the test and evaluation facility earlier than planned to allow the January 1988 date for operation of this facility to be met.
4. Proceeding with design of the repository in parallel with design of the test and evaluation facility and in parallel with underground exploration.
5. Using a construction paced approach for underground exploration and development.

In summary, although the goals of Senate Bill 1662 are optimistic, they should be achievable for a basalt repository provided an aggressive program is immediately implemented and additional funding is provided to the Basalt Waste Isolation Project in the present and coming fiscal years. Such a program would require extensive support from all Federal agencies involved and streamlining of the regulatory process.

Conclusion

Many of the goals and provisions of Senate Bill 1662 are very similar to programmatic initiatives of the present U.S. Department of Energy program. A substantial difference is that the Bill would require completion of many activities within timeframes that are substantially shorter than those to which the waste program is currently geared. The goals of Senate Bill 1662 could probably be achieved for a basalt site, but would require a larger funding base for the next decade. This increase in cost will likely be offset by the effect of providing a repository approximately eight years earlier than the present program.

This completes my statement. I will be pleased to attempt to answer any questions you may have at this time.

P. O. Box 2608
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509-586-2121

Testimony by Glenn C. Lee
Secretary, Tri-City Nuclear Industrial Council
at a hearing of the
Committee on Environment and Public Works
of the United States Senate
Richland, Washington
October 31, 1981

Senator Slade Gorton presiding

Mr. Chairman, my name is Glenn C. Lee. I am secretary of the Tri-City Nuclear Industrial Council. I have been a resident of this community since 1947.

I have also been publisher of the Tri-City Herald since that time, a daily and Sunday newspaper of 40,000 subscribers. I now have the title of publisher emeritus of the Tri-City Herald.

I think it is a fair statement to say that I am in touch with public opinion in this region and we have "public acceptance of nuclear power" to a very great degree among our population.

When the hearings were held on the licensing application for Hanford No. 2 reactor, they lasted for two days and two nights and there was never a witness in opposition to that proposal.

The Nuclear Council is a not-for-profit corporation, formed in 1963. We have almost 200 members of persons, firms, corporations and labor unions interested in the diversification of Hanford, the further utilization of its facilities in behalf of the general welfare and the best interests of our nation concerning the nuclear industry as a whole.

I have read Senate Bill 1662 and also much of the testimony during the hearings in Washington, D. C. It is a very interesting record and most educational.

There are many expert voices testifying and advancing their ideas and their views to your committee about the provisions of this bill. Many of the views are conflicting.

Some of the testimony indicates extended delay and argument in the future. This has been going on for many years and I fear for the future of this program if you continue to permit it to drag on and on. Congress must take action and get on with the program.

At some point you must adopt the best features of this bill, and take advantage of the best ideas, and ignore the criticism and make a decision to get a nuclear waste program underway. If not, our utility industry, our

economy, and our military status is in big trouble in this country. We must have a strong healthy energy system.

I wish to compliment you on the structure and the detail of Senate Bill 1662. It is very comprehensive, and I can see that a tremendous amount of work has been done to bring it this far.

So, speaking for myself, and in behalf of the Nuclear Council, and as a layman, you have our wholehearted support and we commend you and your co-sponsors for your effort and dedication in authoring this legislation.

We know that Hanford's location on the west coast, here in a corner of the Pacific Northwest, is a long way away from the locations of the majority of operating nuclear reactors in the utility industry, and where the majority are being constructed. But if Hanford contractors and the United States Department of Energy with its proven track record of performance in nuclear waste management can serve the United States as a waste site, I assure you that the people in the Tri-City area will accept such an installation and welcome it and cooperate one hundred percent in its construction and management.

Hanford is really the guardian now of more than 70 percent of all the U. S. defense wastes and Hanford people have been successfully managing that waste, handling it and packaging it.

So we here at Hanford are anxious to serve. It is also our belief that a national repository must be developed with both commercial and defense activities taken into consideration -- without undue regulatory constraints. That's two different ball games. It's apples and oranges.

In the bill under title VI, section 603, you have proposed to design a method to have the utilities pay the way by charging them a fraction of a cent for electricity generated for waste storage purposes. This makes the proposition stand on its own feet. This is the real key to the plan.

The program that the bill outlines in regard to the time consumed to complete this program is far too long. It would extend from the present time until January 1, 1988 for the final NRC decision on repository construction application. That's a long time. It's too long. I hope it can be shortened in the interest of our economic independence and national security.

There have been enough hearings in Congress, and enough scientific studies on waste storage, to fill a huge library. To keep on studying means delay. Delay and more delay might mean that we never get the job done. I submit a list of studies and reports on nuclear waste from 1945 to 1980. It covers three pages.

What causes me to make such a statement is that the fact that in 1972 the Atomic Energy Commission announced plans to build a surface storage facility for solidified high-level waste based on existing technology. Hanford was a front-runner for this site. That was nine years ago.

March 22, 1973, Dr. Frank Pittman, director of the AEC division of waste management and transportation, testified at great length before the Joint Committee on Atomic Energy and stated the waste storage matter was a simple problem, no new engineering is required, just maintain the material properly, shield it, remove the heat, get going, Pittman said. That was eight years ago.

At the same time the National Academy of Sciences told AEC that scientific and engineering techology existed to handle nuclear waste successfully. Time went by. Nothing happened.

AEC was dissolved, Joint Committee on Atomic Energy disappeared, ERDA came and went and so did President Carter. But the advancement of the nuclear energy picture was reduced to "slow motion."

Tri-Citians were disappointed at this turn of events. We have always supported nuclear programs and nuclear progress at Hanford. The scientists and engineers and technicians at Hanford have been handling nuclear waste succesfully and safely and reducing it to storage forms for many years. Their record is outstanding.

With more than 10,000 people in the labor force, and every scientific discipline represented that could be required for the development and execution of this bill's provisions, Hanford provides the expertise -- has demonstrated the technological know-how -- and has a combined scientific talent, resources, and dedication to meet this challenge for waste storage and management.

The United States nuclear energy program was born at Hanford with the first reactors. Hanford is a nuclear brain-power center with 24 Ph.D.s per square mile in Richland alone.

Further reasons that we are concerned about delay is that we recall Dr. Clarence Larson, AEC commissioner, testified in February 1974 that a high-level waste management plan was ready to go, to be completed by 1981. I attach a portion of Dr. Larson's testimony at that time for the record.

I also submit copies of letters for the record exchanged between Senator Warren G. Magnuson and AEC chairman Dixy Lee Ray in February 1974. They both agreed Hanford was a good site for nuclear waste management project and AEC was ready to proceed. But nothing happened.

In 1974 we had two draft environmental impact statements on waste management operations at Hanford, entitled -- Wash 1538 and 1539. Hearings were held and views were expressed. Nothing happened. Time passed.

Suddenly out of a clear blue sky, April 10, 1975, ERDA's Robert Seamans, Jr., cancelled the plans for retrievable surface storage facility and withdrew his request for funds.

Considering S.B. 1662, I, personally, don't see why we have to spend an additional number of years now to study this waste problem. In October of 1978 the Carter administration Interagency Review Group released a report on nuclear waste management. It represented the combined efforts of 14 public agencies. The Department of Energy was to update the program by 1981. So how much more study do we need?

One very interesting item in the Review Group report was that the states should not have direct veto power over the location of waste facilities. They should be accorded a "consultation and accordance role," but not veto power. I have noted that your bill covers this situation in title VII. I do not think the state should have veto power.

Hanford is a federal reservation. Hanford is a national asset. It is half the size of the state of Rhode Island. If in the national interest the federal government decides to locate one or more waste sites at Hanford, I don't think the state of Washington, and any other voices of intervention, should be able to stop it.

At some point in time the federal government has to put its foot down and say -- "this is it." "This is the way we are going to do it." "Let's go."

We must serve the utility industry for nuclear storage of its waste, and thereby serve the people.

Our nation built reactors at Hanford to produce plutonium in about 13 to 14 months. Yet we have spent now almost 30 years trying to determine a waste management program. It has taken too long. I urge accelerated action to cut the time and get the job done.

President Reagan has recently instructed the secretary of energy to proceed swiftly toward development of method of storing and disposing of commercial high-level radioactive waste.

Under section IV of Senate Bill 1662, I don't think you have arranged or are asking for the President of the United States to move swiftly enough when you allow him until January 1, 1985 to make a decision for permanent repository

site. If his office has all the knowledge and testimony and findings that have been gathered over the years available, plus a recommendation, the president ought to be able to decide prior to January 1, 1985. That's too long. Time is important.

To give NRC until Janaury 1, 1988 for a final decision -- that is really stretching it. That's too long. We can study and extend this issue forever.

Oregon and California, for example, are two states now prohibiting construction of nuclear reactors until "the waste issue" is settled. Without adequate energy at reasonable costs we cannot operate successfully an industrial nation and military machine.

The electrical generating utility industry in this country is experiencing very difficult times financially in the effort to construct or finish construction of nuclear reactors, and to find a place for spent fuel cores. Without nuclear energy this nation will continue to burn up coal, oil and natural gas, for 75 percent of its electrical generation. The cost is gigantic. The loss is terrible in the burning up of our natural resources. It cannot go on forever. We must develop nuclear power and the federal government must play a key role in this effort.

Maximum cooperation should be extended to the utilities because they are in a poor and a declining financial condition. Inflation, high interest rates, government red tape and regulations, skyrocketing fuel costs, have all contributed to their plunging profits. The value of their assets and incomes affects interest rates and ability to sell bonds and bond ratings.

There is grave danger in the future that utilities will be bankrupt and the federal government will have to take over and we will be an energy deficient nation.

Senate Bill 1662 is a step in the right direction to help utilities, again I congratulate you on this progress, and express the hope that the objectives can be accomplished on an earlier schedule.

The Tri-City Nuclear Industrial Council supports Senate Bill 1662, but we respectfully suggest and hope that amendments can be made that will shorten the process, and expedite construction. We will welcome these facilities at Hanford.

Thank you.

RECORD OF NATIONAL EFFORT TO STUDY PROBLEMS
OF
NUCLEAR WASTE DISPOSAL
1945 - 1980

SOURCE---GOVERNMENT RECORDS
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.

1945 Smyth Report Dealing with problems to come in Atomic Energy.

1958 AEC completes its first bibliography on nuclear waste.

1963 AEC allows three companies to open five waste sites.

1963 AEC begins first experiments in calciner (solidification).

1965 AEC begins waste isolation experiment at Lyons, Kansas.

1968 Nat. Academy of Sciences forms Committee on Radioactive Waste management to review planning.

1969 ORNL authorized to develop concept to bury reprecessed waste in salt.

1970 AEC issues regulations that waste must be solidified after reprocessing and delivered within ten years to federal repositories.

1971 Previous drilling had made Lyons, Kansas, unsuitable for permanent repository.

1974 During the AEC appropriations hearings for the 1975 appropriations AEC announces a new policy for an ultimate High Level Waste repository. AEC studies 13 types of geological forms.

1975 AEC becomes ERDA and NRC.

1975 ERDA shelves plan for surface repositories and opts for deep repositories. Basalt and Nevada.

1976 ERDA begins field probes for deep repositories. Ford calls for the demonstration of all waste components by 1978. ERDA initiates National Waste Terminal Storage Program. (Battelle)

1977 DOE issues regulations that the government will take title and custody of all LWR waste.

1977 Carter disallows commercial reprocessing.

1978 Interagency Review Group on Nuclear Waste Management was formed.

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CHRONOLOGY OF EVENT

12-13-80 Low-Level Radioactive Waste Policy Act. (P.L. 96-573, S. 2189) passed.

12-03-80 House passed H.R. 8379, Nuclear Waste Policy Act.

09-17-80 West Valley Demonstration Project Act passed.

07-30-80 Senate passed S. 2189, Nuclear Waste Policy Act.

02-12-80 President Carter issued comprehensive nuclear waste policy statement.

03-00-79 Interagency Review Group on Nuclear Waste Management submitted Final Report.

11-08-78 President signed Uranium Hill Tailings Control Act of 1978 (P.L. 95-604) to assess and remedy problems with inactive uranium processing sites.

10-00-78 Interagency Review Group on Nuclear Waste Management issued draft report recommending licensing and construction of "Intermediate Scale Facilities" for disposal of nuclear wastes.

02-00-78 DOE issued task force report on waste management describing proposed Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.

10-18-77 Carter Administration proposed Government ownership and storage of spent fuel from Nuclear reactors as a means of dealing with waste management problem.

04-11-75 ERDA announced its intention to prepare an expanded environmental impact statement on management of commercial high-level wastes and transuranium-contaminated waste. Pending completion of this review, ERDA withdrew its FY76 budget request for authorization and partial funding of the retrievable surface storage facility (RSSF).

11-00-74 EPA stated that AEC's EIS on radioactive nuclear waste management is inadequate, primarily because of emphasis on interim, rather than permanent, disposal programs.

09-12-74 AEC issued, for public comment, a draft environmental statement on management of commercial high-level and transuranic radioactive waste. (WASH-1539).

11-14-73 Another 7,000-gallon leak of high-level radioactive waste occured at Hanford.

07-30-73 AEC issued a report on causes of 115,000-gallon leak of high-level liquid wastes from tank at Hanford. Tank corrosion was cited.

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ADDITIONAL REFERENCE SOURCES

Battelle Pacific Northwest Laboratories. High-level radioactive waste management alternatives (ENWL-199), Richland, Washington, May, 1974. 4 vol.

---- Alternative processes for managing existing commercial high-level radioactive wastes. Prepared under ERDA contract for the Nuclear Regulatory Commission. (NUREG-0043) Richland, WA, April 1976.

National Research Council, Panel on Land Burial. The shallow land burial of low-level radioactively contaminiated solid waste. Panel on Land Burial, Committee on Radioactive Waste Management, Commission on Natural Resources, National Research Council, Washington, National Academy of Sciences, 1976. 150 p.

U.S. Atomic Energy Commission. High Level Radioactive Waste Management Alternatives. (WASH-1297). Washington, May, 1974. 81 p.

---- Management of commercial high-level and transuranium-contaminated radioactive waste (Draft Environmental Statement) (WASH-1539). Washington, September 1974.

U.S. Council on Environmental Quality. News release. (A member of the Council...urged today...) Sept. 29, 1977.

U.S. Department of Energy. Directorate of Energy Research. Draft report of Task Force for Review of Nuclear Waste Management. (DOE/ER-004/D). February 1978.

---- Report to the President by the interagency review group on nuclear waste management. Draft. (TID-28817). October 1978.

---- Assistant Secretary for Nuclear Energy. Office of Nuclear Waste Management. Final environmental impact statement: management of commercially generated radioactive waste. October 1980. (DOE/EIS-0046F)

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Testimony by Dr. Clarence Larson - AEC Commissioner
Vol. 20 - No. 7 - Page 50 (2/18/74)

"High Level Waste Management: At the hearings on nuclear reactor safety last September, we advised the Committee that industry has developed demonstrated technology and know-how to design, construct and operate a facility in which commercially generated solidified high-level radioactive waste can be safely and retrievably stored in a way that makes it possible to easily monitor the waste canisters and the facility and to carry out any necessary maintenance.

"Federal licensing regulations require that spent fuel processing operations convert acidic waste solutions to stable solids and that this solid be sealed in manageable, high integrity canisters. These sealed canisters of waste will be packaged according to AEC regulations and must be transferred to the AEC under Dept. of Transportation shipping regulations no later than 10 years after the waste was first generated. The AEC will be responsible for subsequent safe management.

"As we originally announced in October 1973, we are currently preparing a draft environmental statement in support of all phases of our program to develop a repository for high-level radioactive waste. One of the milestones in our Waste Management and Transportation Program is to have this statement in hand next May. We are also now in the process of making detailed conceptual design studies of 3 possible approaches to a retrievable storage facility. Other milestones are to select the most appropriate engineering concept in March and a facility site in May. Our initial plans call for a storage facility to be available for use in about 1981.

"Nuclear Power Growth

"The AEC is undertaking a study to identify the major resource requirements and the immediate action needed to alleviate critical problems that would develop should the U.S. decide to increase the installed capacity for nuclear power generation over present forecast levels. Preliminary results show that the following major areas would require attention to expedite an accelerated growth of nuclear power generation: the supply of uranium ore; the provision for uranium enrichment capacity; the availability of financial capital and skilled manpower; and finally, and perhaps the most difficult of all, the problems involved in siting, licensing, and obtaining public acceptance of nuclear powerplants. At the present, we believe that an acceleration of the growth of nuclear power would be feasible, but only if the goal is widely accepted as a national priority by the average citizen as well as by industry and Government.

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WARREN G. MAGNUSON, WASH., CHAIRMAN
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United States Senate
COMMITTEE ON COMMERCE
WASHINGTON, D.C. 20510

February 26, 1974

Mr. Glenn C. Lee
Secretary
Tri-City Nuclear Industrial Council
P. O. Box 2608
Pasco, Washington 99302

Dear Mr. Lee: Glenn

I am enclosing the full reply which I have now received from the Atomic Energy Commission regarding your letter of January 22.

Best regards.

Sincerely,

Warren

WARREN G. MAGNUSON, U.S.S.

WGM:msw
Enc.

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

FEB 21 1974

Honorable Warren G. Magnuson
United States Senate

Dear Senator Magnuson:

Your letter of January 29, 1974, asked for a report on the current status of our planning for a Retrievable Surface Storage Facility (RSSF). The favorable attitude reflected in the letter to me from Glenn Lee and referenced in your letter was most welcome. This attitude was no surprise, however, as the people in Richland have played a major role in research and development efforts associated with waste management and nuclear energy in general. The key issue in nuclear waste projects is public acceptance. As indicated by Mr. Lee's letter, the Richland area is composed of an informed public which is sophisticated in its understanding of nuclear energy. The Hanford site has the right climate and soil conditions for such a waste storage project. It also has another big advantage not generally recognized, and that is the large resource of trained people, highly skilled in this and related fields.

We are presently working on a conceptual design for the RSSF on a schedule which will allow us to submit it for the FY 1976 budget. Concept and site selection will be made in the next few months. Following site selection, we will hold discussions with civic leaders, and perhaps the public, in the area selected. If we proceed in FY 1976, the design and site preparation might start in late 1975. Construction could then be completed before the end of 1980, in plenty of time to allow us to meet our commitment to receive ten year old waste in 1984.

We hope this provides you with the information that you require. If there is any other information you would like, please contact me or Dr. Frank K. Pittman.

Sincerely,

Chairman

NATIONAL NUCLEAR WASTE POLICY ACT OF 1981

MONDAY, NOVEMBER 9, 1981

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON NUCLEAR REGULATION,
Washington, D.C.

The subcommittee met at 2:15 p.m. in room 4200, Dirksen Senate Office Building, Hon. Alan K. Simpson (chairman) presiding.

Present: Senators Domenici, Simpson, Hart, and Mitchell.

OPENING STATEMENT OF HON. ALAN K. SIMPSON, U.S. SENATOR FROM THE STATE OF WYOMING

Senator SIMPSON. The hearing will come to order.

It is good to know that someone else is late instead of me. They always accuse me of dragging in, and I do a terrible bit of that.

Good afternoon. The Nuclear Regulation Subcommittee meets today to hear testimony from State representatives on S. 1662, the National Nuclear Waste Policy Act of 1981. This is the fourth hearing by the committee on this legislation. We held joint hearings on October 5 and 6 on this legislation with the Energy Committee. Senator McClure has been most helpful and interested in this as has Senator Johnston. On October 31, Senator Gorton held an excellent and productive field hearing in Richland Wash., on this bill. Today's hearing will be the last hearing by the committee on the legislation, and the subcommittee will then begin mark up on S. 1662 this Thursday.

The purpose of the hearing today is to hear the views of State officials of some of the States that are potential candidates for the siting of one or more of the radioactive waste storage and disposal facilities that would be developed under S. 1662. I deeply believe that the full cooperation and participation of the States in which these facilities are to be located is, of course, an essential element in any workable national nuclear waste management plan.

Our witnesses today bring us that important State perspective and the benefit of their experiences in dealing with initial efforts by the Department of Energy and other Federal agencies in the nuclear waste area. I look forward to hearing from them based upon their past experiences and on the principal elements of the legislation now before the committee.

I am particularly pleased that we have with us as our first witness Gov. Richard Riley of South Carolina. I have come to know the Governor. He is a most capable and accessible chief executive. He

brings to these hearings both the perspective of a State that has been deeply involved in nuclear waste matters for a number of years and certainly a wealth of experienced gained as chairman of the State planning council on radioactive waste management. The work of that State planning council has been particularly helpful to us in developing this legislation, and I believe that Governor Riley is to be very much commended for the fine work done by the council. And then after Governor Riley will be a representative of Gov. William Winter of Mississippi, who was unable to be with us today. Then we will hear from a panel of State representatives who have been involved in detailed work with the Department of Energy and other Federal agencies in the nuclear waste management area.

Before we proceed, however, with your testimony, Governor, I would recognize the ranking member of this subcommittee, Senator Gary Hart, who has been most extraordinarily helpful and of great assistance to me in my brief tenure as I have assumed the chairmanship of this subcommittee. Senator Hart?

OPENING STATEMENT OF HON. GARY HART, U.S. SENATOR FROM THE STATE OF COLORADO

Senator HART. Thank you, Mr. Chairman. I wish only to join in welcoming Governor Riley before this committee. He has, as you know, provided invaluable testimony in the past and has demonstrated I think true national leadership on one of the most difficult problems our Nation faces, not only as chairman of the State planning council, as you mentioned, but in his own individual capacity as a responsible and leading Governor of the country faced with some enormous administrative problems already brought on by this diffiulty. I think his role in compiling the State concerns has been an invaluable one to us, and I think the suggestions which he has offered in the past and will offer today will be of enormous help to us.

As with you and other members of this committee, I believe very strongly in a meaningful State role. This is an issue the Federal Government cannot dictate. We cannot tell the States what will and will not be done. We must work cooperatively with them. Governor Riley's presence here and the representatives of other Governors will, I think, help us struggle through the Federal solution to this problem that will, I think, be so important for the safety and well-being of our citizens for decades to come.

Senator SIMPSON. Thank you very much, Senator Hart.

Governor Riley, if you want to take a chair there at the witness table, we would be most appreciative. Nice to have you here, sir.

STATEMENT OF HON. RICHARD RILEY, GOVERNOR, STATE OF SOUTH CAROLINA

Governor RILEY. Thank you so much, Mr Chairman. I thank you both for your kind comments, and I hope nothing I say today will change those positive statements, and I don't think that it will or should.

I say to you, Mr. Chairman and Senator Hart, that I am here as Governor of the State of South Carolina, as has been observed.

This is a State which bears a very heavy burden of this Nation's nuclear waste. I appreciate the opportunity to be here and to address you today on the need to establish in law a national policy and program for the permanent disposal of high-level radioactive wastes.

I have prepared a formal statement for the subcommittee, and, with the Chair's permission, I would like to submit that full statement for the record and concentrate my remarks this afternoon on the major points that are covered in that statement.

Senator SIMPSON. Without objection.

Governor RILEY. Thank you, Mr. Chairman.

First of all, I want to commend you and the subcommittee for dealing with a most important need of this Nation, and that is designing a policy and program for the permanent disposal of high-level radioactive waste.

I am referring specifically to the provisions of S. 1662 contained in titles IV, VI, and VII. The repository program defined in title IV of this bill covers only high-level waste generated from civilian nuclear activities. This is a substantial departure from the bills adopted overwhelmingly by both Houses of the 96th Congress. It is a departure which will, I believe, have serious repercussions in the future. I understand the national security concerns for the possible expansion of regulatory authorities over defense-related nuclear installations like the Savannah River plant, which is in our State. However, millions of gallons of inherently dangerous waste are now "temporarily"—and I say that in quotes—"temporarily" stored at the Savannah River plant and are constantly being shuffled from old, unsafe storage tanks to newer, supposedly more safe tanks. I have been told and shown we have the technology to immobilize these wastes by solidification.

I am pleased to see that the Senate has approved $20 million to move forward with the solidification program, and I hope there will be no action to defer the expenditure of all these funds.

I also have been told that the placement of canisters of military solidified waste in a permanent disposal site along with commercial waste simply does not offer an opportunity to compromise our national security.

I am not proposing any imposition of new regulatory authority that may compromise the security integrity of nuclear installations like the Savannah River plant. Mr. Chairman, the logic of separating military and civilian waste in different repositories, frankly, escapes me.

I contend that separating the efforts to provide permanent disposal for defense-related nuclear wastes will offer nothing to speed their disposal but will in fact hamper and possibly prevent this Nation's attempt to permanently isolate all wastes from our environment. We now have enormous inventories of defense-oriented generated wastes, far more than we have or will have from the commercial sector certainly over the next several decades. No progress in the matter of their disposal, that is, the military waste disposal, in reality is at most only limited progress in permanent disposal of high-level nuclear waste in this country.

I commend the Senate for adopting last week the proposal put forward by Senator Hollings of South Carolina which will require the

administration to develop a plan for the disposal of defense-related nuclear waste. This is certainly a step in the right direction. And I now urge you to amend S. 1662 to put in place a program which will solve the whole problem.

Now if I might turn my attention to the proposals in this bill for the development of so-called facilities for the storage of high-level wastes and spent fuel. These include the proposal for retrievable and monitored storage facilities that are authorized in title V of the bill and also away from reactor, AFR, storage facilities authorized in title III.

I am opposed to including these provisions in any congressional legislation defining a national policy and program for the disposal of high-level nuclear waste. Disposal of high-level nuclear waste, as opposed to storage of high-level nuclear waste, practically speaking, these facilities are no different really from those storage facilities which have existed for over a quarter of a century at the Savannah River plant and other Government installations. Storage rather than disposal has become our national policy by default. What the American people are demanding, I think, is a change in that policy. And I think your committee, sir, is wrestling with that, certainly the subcommittee is. They want a solution to the problem, and any legislation which includes elements that are inherently nonsolutions cannot be characterized as a policy designed to solve the problem.

Including these provisions in this legislation will have several pernicious effects.

First, they will divert attention from the primary goal of permanent disposal and thereby delay or defeat efforts to reach a solution. One committee of the U.S. Senate has already considered an amendment to S. 1662 which says that long-term retrievable storage facilities may be considered a substitute for permanent disposal facilities. The bill hasn't even reached the floor of the Senate yet and some people seem to be conceding that we don't really want to solve the problem at all.

Second, the provisions will require the Federal Government—Senator, I am speaking of the AFR provisions in S. 1662—to use scarce political capital in attempting to site the type of facilities which lead us no closer to a solution. It is argued by some of the proponents of these facilities that it would be easier to site temporary facilities since they are not designed to stay there forever. Anyone who has any real experience or has talked with people who have had real experience with siting a waste facility of any kind I think knows clearly that this fact is simply not true. It is not true because the public has no reason to believe that so-called temporary nuclear waste storage facilities are in fact temporary.

I have often said, Mr. Chairman, that there is a law of political physics not written down in any textbook or in any Government regulations manual, but well-known to the millions of Americans who have had to bear the burden of nuclear waste management in their own States and in their own communities. And this unwritten law of political physics states that nuclear waste stays where it is first put. And we will not repeal, I don't think, that unwritten law until Congress passes a written law which unequivocally states that

the national program to solve our high-level radioactive waste problem is permanent disposal of all present and future waste.

The third point regarding the AFR proposal, implementing these proposals will waste scarce fiscal resources for new facilities, which we can ill afford at this time. The proponents of these measures argue that the Federal Government will be fully reimbursed the cost of these facilities. But even if that proves to be correct, it should be obvious now that private utilities in this country are in no better shape fiscally than the Federal Government. The good old days of throwing any amount and kind of moneys, public or private, at any given problem are long since gone. Fiscal prudence and public accountability demand that we recognize that fact and seek the strongest political decision on the matter and also the best fiscal decision.

With respect to the storage of spent fuel, the utility industry should bear full responsibility for this task, and they should carry out this responsibility to the maximum extent possible at the site of the reactor where the spent fuel is generated. This is the policy proposed by the President's State Planning Council on Radioactive Waste Management, which I had the good fortune of chairing, and it is the policy adopted by the current administration, reaffirmed in the President's recent policy statement on nuclear power.

Over the past 3 years utilities have taken a number of steps which have drastically reduced the estimates of the amount of spent fuel which would be shipped to a Federal away from reactor. With expedited NRC licensing procedures and an aggressive effort by the Department of Energy to demonstrate the feasibility of onsite techniques, such as dry storage, both called for in title III of S. 1662, the industry, in my opinion, can handle this problem, and I compliment those aspects of the bill which make that feasible and possible.

The vague criteria for the acceptance of spent fuel into a Federal AFR would be an open invitation to transfer the burden of spent fuel management to someone else's backyard. Let me give you an example.

Title III, section 311(a) of this bill calls for the Federal Government to encourage the storage of spent fuel at nuclear powerplant sites consistent with, and I quote, "the sensibilities of the population surrounding the powerplant." But, sir, nowhere is there any reference in any title of this bill to the sensibilities of the population surrounding the site of a potential Federal AFR. And this, Mr. Chairman and Senator Mitchell, this is precisely the threat which hangs over the people of my State. For over 30 years, the citizens of South Carolina have done more than their share to shoulder the Nation's nuclear waste burden. For a generation now we have hosted the tank farm at the Savannah River plant. In the last several years we have lived with the threat of becoming the Nation's only repository for the disposal of commercial low-level radioactive wastes, and now we are faced with the prospect of having thousands of tons of spent fuel shipped into our State and stored for an indefinite period of time.

South Carolina is not to be the path, in my feeling, should not be the path of least political resistance in an ill-conceived attempt to seek a national solution to a national problem. By taking action on low-level waste we moved the Congress to establish Public Law 96–573,

a national policy which required each State to assume responsibility for the management disposal of low-level waste generated within its borders. I submit that this was a fair and an equitable and a permanent solution to low-level waste. We in South Carolina are certainly doing our part in that area. If we allow spent fuel to be isolated into one small corner of my State, it would inevitably dull the sense of the urgency needed to insure that nuclear waste disposal is achieved. That would not be acting, gentlemen, in the national interest, in my opinion.

Again, I thank you for the opportunity of speaking to you on the subject, and I would be happy to respond to any questions that the subcommittee might ask.

Senator SIMPSON. Thank you so much, Governor. Very provocative material you present to us.

Let me recognize a member of the subcommittee, Senator George Mitchell of Maine, who is a new member of the subcommittee in this session and has been exceedingly helpful in crafting legislation here. Senator Mitchell?

Senator MITCHELL. Thank you, Mr. Chairman. I want to join you and I know Senator Hart in extending our welcome to Governor Riley, who displayed such leadership in this area, and I will defer to you now for the questions.

Senator SIMPSON. Thank you.

It is good to have your views on the need for interim storage facilities for spent fuels and solidified high-level radioactive wastes, such as away from reactor spent fuel storage, and this difference with the monitored retrievable storage facilities. But if such facilities are included in a comprehensive bill, what safeguards would you recommend to us to assure that these facilities do not detract us from fulfilling the commitment or the mission to have a permanent disposal solution?

Governor RILEY. Mr. Chairman, in my judgment, having facilities of this kind which deal with storage as opposed to disposal, regardless of safeguards, regardless of conditions, will be an effort, a move, which would deter the ultimate determinations required on a permanent disposal. I think that is my view across the board. Now, if we then end up with a policy for an AFR or the monitored retrievable storage, I think language in the bill that would require—and I know there is some language to that effect, onsite storage, reracking, restacking, transshipments within utility shipments that might be available—the language, as I mentioned, of course, which makes it easier for licensing in making those changes possible certainly are a help. But I think to have a clear determination that all of this has been used to its maximum benefit and have that maybe then determined by Congress itself certainly is a form of safeguard that would be a help.

But I again would urge the subcommittee to attempt to put the whole thing in perspective, that these types of solutions are nonsolutions, and no matter what conditions, how much care is put to them, they take our attention off of the real solution, which is permanent disposal. And I feel that that is the basic cause that has aroused such an interest in them, and that is some feeling that there should be some avoidance of reaching an ultimate response.

Senator SIMPSON. Governor, the proposed legislation includes somewhat different State participation mechanisms for away from reactor spent fuel storage and for repository and monitored retrievable

facilities. What are your thoughts on the adequacy of those mechanisms there?

Governor RILEY. As far as the consultation and concurrence provisions generally in the bill, as I indicated earlier, I support them. They are not exactly in the fashion of the State planning council, but it is a very similar type approach. In this kind of measure I do think certainly the States and the localities should have their proper role of input, and, just as you require in the permanent facilities, I think that an override of the State's objection on the part of the Congress should be required. In other words, I think it should be comparable to the same kind of consultation and concurrence requirement that is now present in the bill as far as permanent disposal.

Senator SIMPSON. Is it possible to assure at this point that the operation of nuclear powerplants would not be disrupted if the subcommittee was not to provide at least some limited AFR capacity? What is your thought on that?

Governor RILEY. My thought is, Mr. Chairman, that if complete care and investigation was made, and if a licensing procedure was dealt with as the bill deals with it, making it more reasonable and easier to have reracking and restacking and transshipments and the like, and if the proper attention was given to dry storage, to those other available techniques that could be used on site, in my judgment, I think the so-called window could be closed where there is a mandatory need for some temporary solution. And I think that if we develop this temporary solution, that we are really going to at some point in the future just have another facing up to a resolve of going ahead with the permanent solution, which I think will be misplaced once some temporary solution is dealt with.

Senator SIMPSON. Let me ask you this. This is one that we have certainly grappled with in this subcommittee. Of course, your State contains an interim storage facility at Savannah River, a substantial amount of defense nuclear waste. Should the repositories and the monitored retrievable storage facilities that we set out here in titles IV and V of S. 1662 also be available for the permanent disposal or long-term storage of those wastes, thereby permitting a type of a unified system for commercial and defense wastes?

Governor RILEY. Well, again, as a trial lawyer, reserving my prior objection, I, of course, again choose not to deal with the temporary solutions. If that is dealt with, I certainly feel that it should include all wastes, military and civilian. And I think that if that is done, again, having those facilities on location with a potential site for a long-term disposal facility would make them certainly more acceptable. But again, as I have stated before, I oppose any of the temporary storage mechanisms.

Senator SIMPSON. Yes, I understand. The State participation provisions in S. 1662 would apply to all repositories and the monitored retrievable storage facilities that must be licensed by the NRC. That would include certainly facilities for nuclear waste from atomic energy defense activities. Would you agree with the policy in S. 1662 that affected States should have the opportunity to participate in the development of all NRC licensed waste storage and disposal facilities regardless of the origin of those wastes?

Governor RILEY. Yes, sir.

Senator SIMPSON. Don't go any further. Nobody ever does that around here; answering the question yes or no is unheard of. That is great.

Governor RILEY. That one was easy, sir.

Senator SIMPSON. One further question, Governor. My view, and the view of the staff of this subcommittee, was that the State planning council provided us with some excellent material, an excellent set of recommendations on national nuclear waste management policy, and it certainly reflected the important perspective of State and local government interests. The task of developing State and local recommendations on the policy issues is now completed. Do you believe that there is a continuing need for an organization which is similar to or like the council to serve as a clearinghouse for information and as an independent source of advice for the States and the local governments once we begin to put in place a national waste management program, which I deeply believe we are going to get done finally after 30 years?

Governor RILEY. Mr. Chairman, I respectfully felt when the work of the council was completed that the proper thing to do was to conclude its observations and submit its policy recommendations to the President and to the Congress as its charge was directed. I would point out while it represented a State and local perspective and representatives of Indian tribes, all of the sub-U.S. groupings as far as governmental representation was concerned, there was active participation with representatives of the Department of Energy and other national Government representatives. So we did have a balanced consideration of those views. Now, I certainly feel that if this policy is fully developed—and I join you in certainly hoping that it is—I feel that there very well could be a time in the future where such a council that would be monitoring, considering from time to time those many questions that will come up in the implementation and in the consultation and concurrence procedures for that kind of consideration, perhaps not as elaborately established, but certainly as a sounding board, and a group that you could go to, that other Federal agencies could go to, to get a perspective from those various instruments of Government.

Senator SIMPSON. Well, I can assure you I would feel better if that were the case and would certainly work toward that also in whatever capacity I could to preserve that entity or something very similar to it.

Thank you, Governor.

Senator Mitchell, do you have any questions of the Governor?

Senator MITCHELL. Thank you, Mr. Chairman.

Governor, I am sorry I missed the earlier part of your statement. This may be somewhat repetitious. I wonder if you would tell me whether or not you support the Federal away from reactor storage program as proposed in this bill.

Governor RILEY. No, Senator, it is my opinion that any AFR provision in this bill I think should deal with the policies and programs for permanent disposal and should avoid dealing with the temporary storage or interim storage aspect of this issue, because I think to deal with those is a copout in the sense it gives misdirection, it takes the attention off permanent disposal and puts some last ray of hope

in anyone who might be concerned about permanent disposal that we are going to be able to work out something, or either drag it out to a point, or maybe we will all live to the point that it will all evaporate or something. But I feel that we are facing up to it, and I congratulate the subcommittee for it and the Congress. But I feel the proper way to answer it as a national matter is to answer it in terms of permanent disposal. I think that it would be a diversion of political energy from the permanent disposal issue. It would be a diversion of money that we badly need to get the whole matter resolved.

Senator MITCHELL. Do you agree also that a Federal AFR would dissuade utilities from using to the maximum their onsite storage capacity?

Governor RILEY. I think that it certainly would have that effect. It gives them an easy out from using every innovative mechanism they might use, not only for onsite storage but also transstorage shipments from utility to utility that I think could be utilized. Again, I strongly support those mechanisms in the bill that call for making easier the licensing provisions for arriving at better ways to handle onsite or transshipments of waste within utilities, dry storage, the effect to compact the storage, and so forth.

Senator MITCHELL. You mentioned shipment. Some have argued that a Federal AFR would entail a great deal of transportation for waste, thereby increasing the risk. Do you agree with that?

Governor RILEY. Yes, sir, I think it is very clear to me that moving radioactive waste adds to the problem. If you are going to have an AFR, the logical place to put it is where you think you might end up having permanent disposal. For example, just using the facilities that you might have available that have been mentioned, one of them certainly is Barnwell. That is a very poor place to consider any form of permanent storage, permanent disposal or storage, or temporary storage for that matter. It has every bad feature. And the transportation of waste into there and the transportation out, at such time until a permanent disposal site is located, I think is just adding problems that we don't now have. Transportation is part of it, yes, sir.

Senator MITCHELL. My understanding is that the administration opposes a full-scale AFR program because they believe it should be operated and owned by the private sector, and the environmental organizations oppose it because they believe it would be a Federal subsidy to the industry. It is not often these days we find those two entities in agreement on something. I wonder if you would comment on those arguments, if you care to.

Governor RILEY. Well, I think that—and I am not speaking for the industry, because I can't, and I certainly have not communicated with everyone in the industry. I feel myself that if the industry was put to the test and they were given the proper tools to work with, and that is an easy licensing mechanism—not easy, but a fair one and not an unreasonable one—if they were given a fair opportunity to research and develop dry storage onsite, other mechanisms that they might use instead of an easy out of, "let's just get rid of it and we don't have to worry with all that," I think the industry would develop the answer and would resolve it. Now if you make it where they have to go through a 5-year licensing pro-

cedure to rerack, or a State makes it where they can't go through that at all practically, just trying to throw roadblocks into what they could and should legitimately do, I am opposed to that just as much as the other. But I feel like a industry left to operate in the free use of ability and innovative thought and commerce can resolve the issue.

Senator MITCHELL. With respect to the siting of a permanent repository, would you give us your comments on the implications of providing for an absolute veto by a State of any proposed facility within that State?

Governor RILEY. All right, sir. I testified before a committee here—I think it was a Senate committee—several years ago. I think I was one of the first Governors in the United States, and certainly one of the most affected, that came out with a State position a State ought not have a veto. If you are going to give a State a veto, let me file mine now. I think that would happen 50 times, and we would start over again. I think it is time we answered the problem; we dealt with it; we dealt with it across the board, and not using various diversionary-type tactics. I don't think the Federal Government or anyone else should do that.

Senator MITCHELL. I gather what you would like is maximum real input into the decisionmaking process by the States, but short of a veto for the reasons you suggest?

Governor RILEY. Absolutely. And I think that should be at a very early stage. That is another place I point out in my statement that I think in this bill that the State and local input should come in at an early stage and we should work more with agreements all through the process. But I think in the end if the State files its objection, that ought to carry a lot of weight and they ought to be very careful about doing it. But if they do, I think it is a Federal decision, and the Federal Congress and the President should have the power to override that objection. I think the mechanism in your bill is fine with me in that regard.

Senator MITCHELL. That is what I was going to ask you. Do you favor a two-house veto?

Governor RILEY. My council that I chaired had that proposition in it. But, as I understand, the one-house approval that is in S. 1662, I think is a satisfactory mechanism. From a Governor's standpoint, I would take the position of a two-house veto. But I think that, basically, the consensus seems to be a one-house approval could back up a State.

Senator MITCHELL. Just one more question. Would you care to comment on the President's decision to lift the ban on the reprocessing of commercial spent fuel, and specifically, does this have implications for your State?

Governor RILEY. Well, the issue of reprocessing, along with other issues pertaining to the nuclear cycle and nuclear materials, I attempt to separate out from the nuclear waste issue. The issue of reprocessing cannot be totally separated out, obviously, because it gives off a high-level liquid radioactive waste similar to what we have in the Savannah River plant—23 million gallons of it—and that is the result of reprocessing, of course, in the military development of plutonium.

I would not speak as a Governor in terms of the proliferation issue because I don't think that I am qualified, nor do I have knowledge in terms of national security and international involvement to do that.

Senator MITCHELL. That doesn't stop anybody around here.

Governor RILEY. No, sir. And I think everybody certainly has a perfect right to do that. But as Governor, I would be reluctant to speak to that issue. I do say this: I think the possibility at some point in time of nuclear involvement in this world is as serious a problem as we have in the world, and all of us ought to be carefully tuned to it. But I, as Governor, do not care to get into that. You all have a lot more information and knowledge and expertise than I do.

Senator MITCHELL. Thank you very much, Governor.

Thank you, Mr. Chairman.

Senator SIMPSON. Thank you.

Let me recognize now Senator Domenici, who has been deeply and for a long time involved in the affairs of this subcommittee and takes time from his chores as chairman of the Budget Committee to also participate fully here. Senator Domenici?

Senator DOMENICI. Thank you, Mr. Chairman.

Governor, I am on the other committee that already did the work on S. 1662, so I am one of those that gets to work on it twice. Have you reviewed the provisions that the Energy Committee approved with reference to consultation and concurrence in the bill as reported by the Energy and Natural Resources Subcommittee?

Governor RILEY. Senator, how did that differ from this present bill that you are looking at here today?

Senator DOMENICI. It is the same bill.

Governor RILEY. I thought it was. You all in that committee did not change it from what you are considering here, that part of it, did you?

Senator DOMENICI. Yes, we changed it, but what is here is as changed in the Energy and Natural Resources Committee.

Senator SIMPSON. Excuse me. That is not so. The Governor has not seen those changes of yours that were in the final work draft.

Governor RILEY. S. 1662 as is being considered by this subcommittee, which is what I have had access to, as far as consultation and concurrence provisions, I generally support them. They are not exactly as I, as a Governor, would prefer them to be, but I would support them as is, and I said that earlier.

Senator DOMENICI. Governor, in the bill reported by the Energy and Natural Resources Committee, we addressed an issue that I think you are concerned with, and that is the timeliness of the opportunity on the part of the State or Indian tribes to begin that process of entering into an agreement that is accomplished by consultation and concurrence. We moved it up to the official notification to a state that they are now seriously interested; they can do some geological work and other things and not bring that time into focus. I would merely ask you this. I understand from your testimony you, too, think that for the process to be credible it has to be at the earliest possible time. You can't go through a national elimination process and be the one State ticking and then let them say we would like to negotiate. That puts the Governor and that State in an untenable position that they really will be perceived, as I understand it,

to have already been selected. You really want a full-blown consultation and concurrence process where major issues are agreed upon and some State position of arbitration or the like is brought into that concurrence process. Is that not correct?

Governor RILEY. Yes, sir. The written statement which I filed with this subcommittee certainly points out that concern I have. I did not speak to it as a main point, but I am certainly pleased that the Energy Committee saw fit to move the stage that the State and local participation and consultation and concurrence is moved to an earlier stage. I certainly strongly support that. And I appreciate, Senator, your background of being concerned about the State interest, and I am very familiar with that and appreciate it. I think all Governors would. But I am in thorough agreement with moving the consultation aspect up as soon as and as early as possible.

Senator DOMENICI. Let me just ask you if you would have time with your staff to look at that language. It is definitely moved up in time, but it may not be specific enough. That is, that which triggers the right to begin the negotiating may not be specific enough. I would like some observations from you, if you have time with your staff, on how we might make sure that it is really an early point in time and appropriately triggered.

My second observation is, Have yo or your staff had occasion to look at the agreement entered into by New Mexico and the Federal Government for the low-level military waste depository called WIPP?

Governor RILEY. Yes, sir. Of course, my staff on the State planning council was very familiar with that, and my staff is familiar with it, and we are working very closely with—Governor King, of course, was on that council. I am familiar with it. I don't know in what respect you inquire.

Senator DOMENICI. Well, the basic provision they had trouble with that I think we have now clarified in this national law is that when a dispute arises, they can provide in the agreement with the State a method for resolving the dispute by formal, mandatory arbitration. We submitted that early on, 2 or 3 years ago, as an approach up here and nobody seemed to understand it. But they wrote it in that agreement and it now appears to be binding and we have now carried it forward, if I understand this legislation. Is that the kind of thing the Governors recommend in terms of maintaining the State's real involvement in the significant decisions as they evolve?

Governor RILEY. Yes, sir, I think that is the kind of provision that States would generally welcome, and I think would mean as you move along the process you would be moving with meaningful progress, and you would not get to a certain stage of the process and all of a sudden a community and the people of a State or whatever find out about it, and then they have a great feeling that they have been done in. Without the details of that type arrangement, the availability of reaching agreements at the various stages I think is a very important, critical aspect of the procedure.

Senator DOMENICI. And a totally legal mechanism for resolving disagreements, if possible, is equally important?

Governor RILEY. I think that is, certainly, if all sides agree to it. It gets very delicate in setting up an arbitration mechanism in the law, and totally binding and required by everyone. I certainly would

support a voluntary type arbitration apparatus at various stages, and I think that would be extremely helpful.

Senator DOMENICI. Well, I would think, Governor, that the most important aspect of this consultation and concurrence—I think there are two. First, that the States and/or Indian tribes or Indian nations that are involved truly being to the participation early enough so that it can truly be perceived that they have some say-so, and as we go through a number of potential sites from whence we will pick one, that we not have that so narrow at the beginning that they would not perceive there is really a chance. It appears to me a problem of the Governors is if they have only two from whence only one is going to be picked, or two from which two are going to be picked, it appears you have no staying power with the people to indicate this is a meaningful process. It appears to me this is sort of prearranged and you are going to go through some gymnastics by way of participation. Do you understand what I am saying?

Governor RILEY. Yes, sir. I would say this, Senator Domenici, that to have a true process—and this is really the process that is going to be tested, because if there is any need for a true, fair, democratic, in the sense of letting everyone have proper input, I think this is going to be it. I think it is important in this country for us to crack that nut. But it is important, I think, for more than what you say, and that is to have a fair number of sites to consider. I think that is very important. I think it is likewise important to have a reasonable timetable. And I am a person that is in a hurry. I would like to see a permanent disposal site chosen tomorrow, or better still this afternoon. But I think if we are going to have a legitimate process, that you have to realize that, and you have to make the process real enough to have a reasonable number of considerations, and you have to have a reasonable timetable that you can then live up to and stick by, and the public realizes it is a meaningful process.

Senator DOMENICI. Well, Governor, I think this committee will have a good opportunity to measure whether the Energy Committee did in fact do that. The timetable was perceived by a majority of the other committee, my suggestion, to be far too short to be credible. Therefore, it was moved a bit. The up-front selection process from whence the first would be chosen was too quick and too small in terms of numbers to be perceived to be really offering a choice. And there was no requirement that you have sites from various parts of the country. They could have all been from the first two or three. As you well know, they have an up-front selection process that has been going on, and they would have narrowed it down to a couple of those they have been working on, and none would have been east of the Mississippi. So we built in geographic disparity in the first batch and more numbers and delayed it a year from the bill you have reviewed so that it does some of the things that I think you were saying, as I understand you here.

Governor RILEY. Well, that is of great interest to me and I will certainly have my staff review that. We would appreciate your staff on the Energy Committee making any of that information available.

Senator DOMENICI. Thank you very much, Mr. Chairman.

Senator SIMPSON. Thank you, Senator. Always appreciate your assistance. Your State was deeply involved in this issue at one time with some of the early pilot materials.

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I would just say at this point that the Energy Committee indeed added 13 amendments to the legislation in the process of their final markup before their referral to this subcommittee, from which we must act in 30 days. With one or two minor exceptions, none of which have been addressed by the Senator from New Mexico, they are very good amendments. And his particularly, add a real dimension to the legislation, I think are very helpful. I do have a question about one or two I will discuss at a later time, not here.

Governor RILEY. That is all part of the process.

Senator SIMPSON. Just one further question, Governor. I know you have been very generous with your time. But do I take it from your testimony that it might be said that you support the procedures that are in title III of this legislation which expedite the approval of proposals to expand the capacity of reactor storage of spent fuel? Is that a fair interpretation of your views?

Governor RILEY. Yes, sir, I support those fully and think with those in place that issue is resolved.

Senator SIMPSON. And then if I might add one final one. What are your very brief views on the test and evaluation facility that is listed in this legislation? Do you have a thought on that?

Governor RILEY. The State-planning council had a limitation in there that perhaps, Mr. Chairman, this subcommittee could consider, and that is a time duration that would be involved in making sure that it is in fact a test and evaluation facility.

Senator SIMPSON. And keep it that?

Governor RILEY. Yes, sir.

Senator SIMPSON. Thank you very much. You can see that your background and your unique experience make all of us very interested as we develop this, and I very much appreciate your being here. Thank you.

Governor RILEY. Thank you, very much.

Senator SIMPSON. The next witness please, Mr. Charles Deaton, administrative assistant for economic development, natural resources and transportation to Gov. William Winter of Mississippi. Nice to have you with us, Mr. Deaton.

STATEMENT OF CHARLES DEATON, ADMINISTRATIVE ASSISTANT FOR ECONOMIC DEVELOPMENT, NATURAL RESOURCES, AND TRANSPORTATION TO GOV. WILLIAM WINTER OF MISSISSIPPI

Mr. DEATON. Thank you, Mr. Chairman.

I think you had a very enlightening and thorough study by a gentleman who is recognized as an expert in this field, Governor Riley, on this subject. Much of his position we in Mississippi echo and support.

Governor Winter could not be here today because of other commitments. He wished me to express his appreciation to you personally for your inviting him, because we in Mississippi, and I will say this, Senator, we are concerned. One of those sites is east of the Mississippi, and it happens to be in Mississippi. And we have had some unique experience that we feel, like in the Governor's statement, that we have some suggestions, many of the points raised by you

here today, that we feel like will be worthy of your consederation and might help you in the deliberations on the bill.

I would like at this time to ask the permission of the committee to submit the Governor's statement into the record.

Senator SIMPSON. Without objection.

Mr. DEATON. I would like to say that we in Mississippi have been going through the process of the early on exploration of our State, and part of it unknown to those in State government and part of it unknown to our senatorial and congressional representatives in Congress. This is why I certainly support the position of the Senator about the early consultation with the State, at least letting them know you are in there and looking.

We firmly believe that it is extremely necessary that this Congress pass some legislation where the people can know what the elected officials have decided what the law should be, what the policies are, what the guidelines are, what the provisions are. This has made a real problem for us in our State. I certainly feel if we had had the guidelines, the policies, the proposals of the thought-out, debated legislative directions that our people would have accepted them in a much better manner, that we would have been able to look at the progress and make a more educated decision early on than we have.

Following me today we do have two of the gentlemen from our State who are well versed in the technical side of it and the practical side of it, and I think it would be much more helpful to you in discussing the various details of it to address your questions to them. But I certainly appreciate the opportunity of appearing here and presenting Governor Winter's statement to you.

We sincerely urge you to pass some legislation establishing some policies and some guidelines so that when you change horses in the middle of the stream we don't change the ballgame, so we will know where we are and whose rules and regulations we are playing with. We certainly feel that each State is deserving of equal treatment. If you are going to have a veto for one State, we certainly would appreciate one in Mississippi. We think that policy should be clear. We had a meeting of about 5,000 people on the gulf coast yesterday afternoon on this one subject. It is hard to administer and soberly look and constructively look at legislation and look at activities when the people ask you, "I understand one State has a veto. How come we don't?" This has made political problems for us as well as actual problems.

We certainly appreciate the opportunity to appear before you. and I certainly hope the statement will add to your deliberations, I think many points that you will find in there are going to be the same as Governor Riley has addressed. I appreciate it.

Senator SIMPSON. Thank you very much, Mr. Deaton. I did have an opportunity to visit with your Governor by phone about this issue, and he obviously is very alert to the issue, as we are, and I do appreciate your making yourself available. Since you have simply and most appropriately entered the Governor's testimony in the record and we do have two people with the technical background, I think I will defer my questions and direct those to the two people from your State with that technical experience. You wouldn't mind that.

Mr. DEATON. No, sir. I would appreciate it. Being a lawyer, I understand the time constraint.

Senator SIMPSON. Do you have any questions?

Senator MITCHELL. No questions.

Senator SIMPSON. Senator Domenici?

Senator DOMENICI. Well, Mr. Chairman, I just would like to ask a couple.

What do you mean one State has a veto and another doesn't?

Mr. DEATON. Well, according to the press and politics, it seems both the Presidential candidates last time went into Louisiana and came out with an agreement they would have a veto power in that State. This has caused us, as you can readily understand, quite a political problem trying to explain to our people, while we don't have a political veto or a veto on the project in Mississippi.

Senator DOMENICI. So are you suggesting that Congress, as a matter of policy, declare that they all start with the same rules?

Mr. DEATON. Yes, sir, that is exactly what we are here for.

Senator DOMENICI. So if there is some letter around from President Carter and candidate Reagan about this, you are suggesting that we say that is not the policy of the Congress, that they follow the concurrence and consultation process in each State. Is that what you are saying to us?

Mr. DEATON. Yes, sir.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator SIMPSON. Thank you very much, Mr. Deaton.

The next panel consists of five witnesses: Mr. Ron Forsythe, nuclear waste specialist of the Department of Energy and Transportation of the State of Mississippi; Mr. John W. Green, nuclear waste program manager of the State of Mississippi; Dr. William L. Fisher, director of the Bureau of Economic Geology, University of Texas; Mr. Alvin E. Rickers, director of the Division of Environmental Health of the State of Utah; and Mr. Philip Gustafson, director of the Illinois Department of Nuclear Safety.

I believe each of you have been advised that you have 50 minutes for the presentation of testimony, and then questions from the Senate panel.

STATEMENTS OF RON FORSYTHE, NUCLEAR WASTE SPECIALIST, DEPARTMENT OF ENERGY AND TRANSPORTATION, STATE OF MISSISSIPPI; JOHN W. GREEN, NUCLEAR WASTE PROGRAM MANAGER, STATE OF MISSISSIPPI; WILLIAM L. FISHER, DIRECTOR, BUREAU OF ECONOMIC GEOLOGY, UNIVERSITY OF TEXAS, ACCOMPANIED BY MILTON L. HOLLOWAY, EXECUTIVE DIRECTOR, TEXAS ENERGY AND NATURAL RESOURCES ADVISORY COUNCIL; ALVIN E. RICKERS, DIRECTOR, DIVISION OF ENVIRONMENTAL HEALTH, STATE OF UTAH; AND PHILIP GUSTAFSON, DIRECTOR, ILLINOIS DEPARTMENT OF NUCLEAR SAFETY

Senator SIMPSON. Please proceed, Mr. Forsythe. We will just go in the order of the panel listed on the agenda.

Mr. FORYTHE. Mr. Chairman, I would defer further comment to Mr. Green and will serve in the role of technical adviser to him.

Senator SIMPSON. Mr. Green.

STATEMENT OF JOHN W. GREEN, JR.

Mr. GREEN. Thank you, Mr. Chairman, members of the committee. We, too, have prepared written testimony for the nuclear waste program of the State Energy and Transportation Board and have submitted it for the record. Our oral comments will be more or less a synopisis of that document.

Senator SIMPSON. Without objection, they will be accepted.

Mr. GREEN. Thank you.

It is indeed an honor and a privilege to present this testimony concerning the matter of a national waste management policy. It is refreshing to know that responsible elected officials at the Federal level are attacking the problem of nuclear waste management head on. It is our opinion, in Mississippi, that a national policy is long overdue and must be addressed in order to maintain a nuclear-generated electrical power option for this Nation. We are of the further opinion that, regardless of whether this Nation is to maintain a commercial nuclear power option, we vitally need a legislatively established, technologically conservative, comprehensive nuclear waste management policy.

In keeping with that philosophy, I would now like to address the technical issues of nuclear waste management that we have already experienced in Mississippi, some of which are addressed in S. 1662. We would hope that the Congress could benefit from some of our past experienced.

Some of these experiences demonstrate the need for a consultation and concurrence mechanism, preferably through a Federal/State negotiated agreement, early in the process by which the various geologic media are examined for their potential suitability as geologic repositories. It is our suggestion, having been subject to the area characterization phase of geologic investigation, that the consultation and concurrence processes be formally agreed to by the Federal Government in any State in which studies are to be performed prior to the initiation of the area characterization phase. As a result of the lack of an agreement, the political sector as well as the Mississippi public have voiced their opposition to the development of a repository within one of the salt domes in our State.

This brings me to the second major point which I feel should be present in any piece of legislation. Impacts that are of both a sociological as well as an economic nature have already occurred in not only the impacted county in which both of the two recommended salt domes are located, but in substantially all of south Mississippi. The unilateral and bypartisan opposition to the development of a geologic respository has not been without some just cause. The public as well as the political segments of our State have felt only adverse reaction from "major Federal actions," namely, the usurpation of about 40 percent of the impacted county by the Federal Government for the Camp Shelby Military Reservation and the use of the Tatum Salt Dome in Lamar County as a site for nuclear experimentation for defense purposes in the 1960's. These actions of the Federal Government were performed without consultation with the State, let alone concurrence, and have resulted in a distrust of the federal system by the affected populace.

As a result of the past failure to properly inform the public and appropriate State agencies through a consultation process, the State is reluctant to concur in the development of a repository and has also

expressed its total objection to any further courses of study. The C and C agreement could serve as the vehicle by which both real and perceived impacts are addressed and provisions made for their mitigation.

Technical conservatism in the various stages of site assessment and screening is critical. One means by which to enhance if not insure technical conservatism is through the establishment of specific technical criteria and specific environmental standards by the two principal regulatory agencies—the Nuclear Regulatory Commission and the Environmental Protection Agency. We are highly supportive of the approach used in S. 1662 to identify the applicable standards and technical criteria and that site disqualification factors must be identified.

Technical conservatism is best served by the complete and thorough assessment of all the technical, socioeconomic, political, and institutional issues in a reasonably established and technically achievable time schedule. The siting of our Nation's first deep geologic repository should be considered vastly different from the siting of a nuclear power electrical generating facility inasmuch as the repository will have to serve the needs of the Nation for perhaps thousands of years. The concept of a "licensable site" should be modified to "best possible licensable site." The time schedule addressed in S. 1662 appears to be too ambitious in terms of adherence to the philosophy of technical conservatism. And I may add, too, we have not seen the markup of the new amendments there. If the intermediate steps such as increased on-site storage, leading to the ultimate disposal as specified in S. 1662, are utilized, there is no need to accelerate the program and jeopardize technical conservatism. If inadequate studies are performed due to unrealistic time schedules, unwise decisions could possibly be made that could compromise the health and safety of the people and the quality of the environment.

I would like to offer for consideration by the committee some comments which we in the State of Mississippi feel would possibly strengthen the bill.

Section 403 of the bill calls for Presidential review and a decision on sites for characterization. First, the President is given only 2 months in which to review the Department of Energy recommendation which is the culmination of at least 5 years of work. If the President is placed into such a decisionmaking position, we feel he should have either the advice from an independent technical advisory group such as the now defunct State Planning Council or mechanism of congressional concurrence in such a decision. We are of the further opinion that should the provision be maintained in the bill, the de facto approval through the mechanism of no Presidential decision be stricken from the language.

Although we are uncertain of the value of the test and evaluation facility, as well as the committee's intent in authorizing the facility, we are pleased that congressional approval of the construction is required. We are very much concerned, however, that the paragraph requiring NRC concurrence in siting, design, construction, and operation of a TEF would compromise the NRC's position of independence if the TEF proves to be a site for which the Secretary applies for repository licensure.

The State applauds the language of the bill authorizing objection to a siting decision. We suggest that a mechanism of conflict resolution be required at an early stage of area characterization. There have been substantive differences between the Department of Energy and the State agencies on the study methodology, as well as interpretation of the data and the recommendations arising therefrom. I believe that most of those problems could have been avoided if a consultation and concurrence agreement had been in place early in the process.

The absence of any reference to defense-related high-level waste and the disposition of same has caused some concern. Our interpretation of title VII is that regardless of the waste origin, the States involved in a repository siting action could be granted the right of participation and that NRC would license the facility using the identical EPA standards and the technical criteria. In our letter of October 6, 1981, to Senator McClure, we commented on the lack of appropriate language to handle the defense-related waste. If the intent of the committee is to utilize the approach which I have identified, we have no qualms with the bill's language. We do feel that the confusion surrounding the issue of defense-related waste would be eliminated if the language of the bill would address wastes not only from "civilian nuclear activities," but also from the defense sector.

As a final comment, Mr. Chairman and members of the committee, we in Mississippi strongly support the concept of a permanent solution to the waste management issues. As the distinguished Senator from Idaho noted in his introduction of the bill on September 24, 1981, the people of his home State have patiently awaited a solution to the nuclear waste management problem. That sentiment in Idaho is not unique, as the entire Nation has awaited for that same solution as wastes from nuclear activities have been accumulating for nearly 40 years. National patience has worn thin and past failures in terms of a national waste management policy has resulted in a sense of public distrust and misgivings of the system. We sense that the public's anguish over nuclear waste disposal can be soothed, but only through the passage by the 97th Congress of a comprehensive, technologically conservative, environmentally sound, publicly acceptable national waste management policy.

Thank you again for the opportunity of presenting these comments, and hopefully they can be utilized in a manner that will be of contribution to the waste management effort of this Nation.

Senator SIMPSON. Thank you.

Mr. GREEN. If Ron and I can answer any questions, we will be happy to.

Senator SIMPSON. We will come to that at the conclusion of the full panel's presentation. Thank you very much, Mr. Green.

Dr. Fisher please.

STATEMENT OF DR. WILLIAM L. FISHER

Dr. FISHER. Thank you, Mr. Chairman, and members of the committee. I have with me today Dr. Milton Holloway who is executive director of the Texas Energy and Natural Resources Advisory Council. I would indicate we are giving this testimony on behalf of Governor Clements.

I will highlight certain points of our testimony but ask the full text be incorporated as part of the record.

Senator SIMPSON. Without objection.

Dr. FISHER. The leadership in the State of Texas does support the development of nuclear power and a timely, technically sound and credible resolution of the high-level waste disposal problem. We do because we have two nuclear reactors being built in the State at the present time and also two separate areas in the State are being looked at as potential candidates for acceptability as high-level waste repository sites, one in the eastern part of the State and one in the western part of the State.

Our specific comments on the legislation being reviewed in this committee concern the statutory deadlines for siting of facility; second, the role of the States in decisionmaking; and third, the lack of provision of authority in the bill for the Secretary of Energy to reach agreements with the States on impact mitigation or compensation.

The State of Texas has been rather closely involved in these studies over the past few years. We agreed some time ago to assist the Department of Energy in gathering geotechnical data and carrying on investigations of salt formations in both east Texas and west Texas. We have proceeded in good faith in these investigations, and we think, absent any radical departures from the present procedures, we expect to continue that cooperation. We have developed basic geotechnical data. We have provided analysis and interpretation of these data. We have reviewed plans of the Department and several of their contractors. And we have overall attempted to work in as much cooperation and unison with them as we can.

While the provisions of S. 1662 are generally consistent with the positions that are articulated by Texas officials on this subject, there are several alternatives which, based on our experience, would render the bill more effective and equitable, and that is a major point we would like to make.

The first point of concern is the statutory deadlines for siting of the test and evaluation facility and the first repository. The salt bed studies in Texas were started at a fairly late date. We think it is unreasonable to expect an answer to the remaining questions on such things as hydrology and salt dissolution in time for the proposed June 1, 1982, decision points as provided for in section 403(b). We appreciate that judgments as to what constitutes adequate technical and geologic investigations for these kinds of decisions will vary, but we conclude that the schedule as it is defined in this bill is simply unrealistic. That conclusion we base upon a substantial technical investment in the current Texas study and a knowledge of the scope and content of the geological and technical criteria specified by DOE and NRC, and those are rather significant and I don't think in our experience. I note the U.S. Geological Survey has testified in the same context, that those can't be met under the kind of timeframes that were in the original bill.

The second point concerns the role of the State in decisionmaking. Basically, the structure that is defined in the bill is the right direction, but it needs some revision. Filing valid objections by the State at the time of an application for a construction license is simply too late in

the process to have any kind of meaning. Once we get to the point of where there has been a substantial investment, say, of $40 million in an exploratory shaft, there is too much of a burden for the State in terms of trying to have effective and meaningful input at that time. If evidence available to a potential host State indicates that suggested sites are not suitable or, in another situation, which may actually be more likely, have simply not been characterized to the extent that the DOE and NRC criteria call for, the opportunity should be provided for these objections to be raised and to be carried to a fairly high forum, and at a very early stage. But in any real sense, once we have come to that decision, we are a good way down the road. We think that the Congress should direct the Secretary of Energy to specify for the Governor of a host State all the major decision points leading to a repository siting decision.

I have included in our testimony correspondence between Governor Clements and Secretary Edwards and the resolution of the Energy and Natural Resources Advisory Council in Texas that calls for the definition and provision of those schedules and technical reports. We are still working in that effort and have not been able to consummate that point at this time.

On the issues of congressional review of a Governor's objection, my Governor believes that a two-house override of State objections is necessary as a mechanism to adequately and fully recognize State objections.

The bill requires that the Secretary of Energy negotiate a specific consultation and concurrence agreement with the Governor of affected States. We think it is critical we define with some precision what there is to be consulted about and what we are going to be concurring about and get this down in a good businesslike, black-and-white arrangement. We recommend that Congress instruct the Secretary of Energy to provide the States with a timely, specific, detailed scheduled for accomplishment of all the studies that are required by the DOE and NRC to meet the criteria for test drilling and selection of the site of exploratory shafts and other kinds of activities along that line. We secondly ask that the Secretary be instructed to notify the Governor of any pending key decisions, and then, thirdly, to make available for review by the States drafts of the technical reports that are being drawn to justify these critical and key decision points. If we have that kind of timetable and that kind of definition and that kind of deliberation spread out, then we feel there is a meaningful mechanism for the State to consult and we have got something we can discuss and talk about. Those we think are very specific, and if we define them in general terms we will be talking at what point in the triggering mechanism, as I think the Senator from New Mexico was mentioning.

The third major point is impact assistance. Clearly, the host community selected for a high-level waste repository will bear a significant burden for the Nation as a whole and should reasonably expect to receive some kind of remuneration for negative impacts. I simply have to point out the rather substantial geographic disparity in this

country. The principal benefits of nuclear power have been in one part of the country and the principal areas that are considered as candidates for repositories are in another area. Our experience indicates that States and local communities will not be willing to accept such facilities unless the perception of benefits exceeds the costs and risks of the project. That is pretty basic and fundamental, in our judgment. We believe that the best way to develop specifics of such impact assistance is to include a provision in the legislation which specifically authorizes the Secretary of Energy to enter into negotiations with the States to provide mitigation and other types of benefit measures that may be appropriate in getting this thing to the point where the perception of benefits is at least equal to the risk. If we get to that point, it would be a valuable one in terms of eventual acceptability by local communities and States.

In closing, let me reiterate our intention to continue to cooperate in the repository investigations underway in our State, provided a rigorous, deliberate, and technical investigation program is developed and maintained. We would insist that the State be assured ample and specific opportunity to fully participate in all aspects of the high-level waste repository development program. We believe that the suggestions presented here will enhance the partnership of the Federal Government and potential host States and will reinforce the possibility for success in this critial national endeavor.

Thank you, Mr. Chairman.

Senator SIMPSON. Thank you very much, Dr. Fisher.

Mr. Rickers, please.

STATEMENT OF ALVIN E. RICKERS

Mr. RICKERS. Mr. Chairman, I am making the presentation on behalf of Scott M. Matheson, the Governor of Utah. A full statement has been provided, and I would like to summarize.

Senator SIMPSON. Without objection, that statement will be included in the record.

Mr. RICKERS. Utah has no nuclear electric power generating plants. However, since the Department of Energy has identified potential nuclear waste repository sites in bedded salt in Utah's Paradox Basin, the State has intense interest in S. 1662. Nearly 1½ years ago, the Governor established a task force of elected officials from the affected area of southeastern Utah, members of the public, and selected State experts to track national actions which might lead to construction of a nuclear waste repository in Utah and to make recommendations for State action. That group has worked closely with the Department of Energy on regional, area, and specific site considerations. Selection of the Nation's best possible sites for the storage of these high-level wastes must be made in a professional and open process involving all affected parties. We think it is important that the selection process include provisions for consideration of all factors bearing on the problem.

In regard to time deadlines, these dates must allow sufficient time following the enactment of the National Nuclear Waste Policy Act for the Department of Energy to adequately respond to dates which may be specified in the act. I concur with Senator Domenici that the site selection is too small and too quick. Even after the amend-

ment made by the Energy and Natural Resources Committee it is still too quick.

On the Presidential review of recommended sites, the default approval resulting from the President's failure to make a decision within 60 days after receiving the Secretary's site recommendation ought to be a positive action. This is an important decision. It is recommended that the default approval provision be stricken and that the President merely be required to act within 60 days. The second provision for possible default approval at the end of 6 months needs to be modified similarly.

On consultation and concurrence, Gov. John Evans of Idaho aptly addressed this issue in his testimony before the Environment and Public Works Committee during the field hearing in Washington State, and Governor Matheson shares his concerns about the role of the States and Governors in the process: "No State should be allowed to unreasonably impede the national interest."

While section 401 of this bill does provide some of the necessary components of the consultation and concurrence position endorsed by the National Governors' Association, it does not, however, provide the opportunity for States to negotiate with the Department of Energy before the President formally approves a site for further characterization study. The addition of this procedural step would considerably strengthen the partnership status of the States at a critical stage without jeopardizing the authority of the executive branch to make an overriding decision determined to be in the best interests of the Nation.

It is imperative that the burden for initiating and obtaining a congressional override of States' objection be placed on the Department of Energy. Congressional review of objections to any siting decision is entirely appropriate. Placing the burden on the Department, rather than the States, will insure that DOE's site selection process will proceed in an orderly, thorough, and defensible manner. It is the DOE site selection process that must be reviewed by and defended before Congress, not the objections of a monitoring State.

Similarly, provisions for congressional review should not be incorporated into the procedural mechanism for resolving disputes involving siting of an AFR spent fuel facility. Again, the burden should be placed on the Department to defend its decision in a review by Congress.

The principles of consultation and concurrence must be incorporated into every phase of this most sensitive decision override.

For the National Environmental Policy Act, section 404(a) of this bill proposed to alter the accepted manner for environmental review under NEPA. The review for site characterization activities would be deferred until after selection of sites for the sinking of shafts. The bill would further limit that initial review to an environmental assessment. It is absolutely essential that the NEPA process begin prior to the selection of those sites for location of an exploratory shaft because the large capital investment involved makes it likely that a repository will be sited at the exploratory shaft site.

As far as community impact, areas of growth management and mitigation of socioeconomic impacts have been central themes in Governor Matheson's administration. Payment in lieu of taxes are

not an adequate solution to the problem presented by the siting of a high-level repository.

The development of a high-level nuclear waste repository would create substantial gaps between revenues and expenditures for the governmental units involved. Gaps would probably exist in both financing additional or improved capital facilities and ongoing maintenance and operations programs. Capital facilities includes sewer and water plants, transmission lines, distribution and collection lines, schools, roads, municipal buildings such as fire stations, public safety complexes, and city halls, and to some extent, major equipment purchases such as fire trucks. The major issue with capital facilities is that they should be in place prior to the arrival of the impact population. The funds for construction and improvement of such facilities are not available through conventional financing methods prior to the boom especially where the major cause of the impact is tax exempt and consequently does not directly affect local assessed valuations. The issuance of bonds is risky for small jurisdictions since no guarantees exist relative to repayment or that impact levels would behave as predicted.

Before funding mechanisms can be discussed, it is appropriate to develop principles which define the local interests and thus form the basis for selecting alternatives. The following ground rules are suggested in setting such principles:

(1) There should be no involuntary decrease in the quantity of services currently provided to local residents.

(2) There should be no involuntary increase in the taxes paid by the current local residents that would be a direct result of the development.

(3) If prior to development there exists unused community infrastructure such as extra water or sewer capacity or bonding capacity, then the same excess should exist following the growth or the jurisdiction should be compensated. Just because a jurisdiction has a capability to absorb some growth does not mean this capability should be provided free to the project.

(4) Local control over services and facilities must be maximized.

(5) All risks should be absorbed by the project developer, in this case, the Federal Government.

Assignment of risk to the developer means that neither the residents nor the jurisdiction should be held financially or fiscally responsible for errors made by the developer in forecasting the magnitude of impacts.

The following options may be used to alleviate front end financing deficits that may be incurred by local and/or State governments: No. 1 would be direct Federal impact assistance grants. In terms of reducing the impact of new Federal installations, the Congress in the past has authorized special legislation in two cases to permit the Department of Defense to pass funds through to local governments. One was dropped when the plans for the installation were dropped. The other one, between 1975 and 1981, for the Trident community impact assistance program, involved $55 million of construction and construction-related grants to Kitsap, Jefferson, and Mason Counties in the State of Washington. These grants fully covered the added State and local infrastructure costs.

As a matter of comparison, it is estimated that the Trident program would result in a 28,000-person population impact. As a point of com-

parison, the first proposed high-level nuclear waste repository indicates a peak construction work force of 5,000 with a long-term impact of 1,000 workers and their families in a small southeastern Utah community. This would likely translate into a total person population impact of 17,000 to 18,000 people.

A second way would be a revenue bond guarantee. In this case, for particular capital facilities, such as water and sewer systems, the Federal Government could guarantee the issuance of revenue bonds. Therefore, the ultimate risk for the bond would be borne by the Federal Government and not the jurisdiction.

A third way would be the purchase of bonds issued by the jurisdiction.

The fourth method would be a grant/loan combination. The construction of capital facilities could be financed by a grant or loan combination. The proportions of loan dollars to grant dollars could be determined by the proportion of actual property tax revenue impact to the amount of potential property tax revenue if the project were not exempt from direct taxation. Under this method, if a school needed to be constructed at a cost of $10 million, and the tax base were only $4 million, then a grant of $6 million would be made in combination with a loan of $4 million, which would be paid off by the increased tax revenue.

And the fifth would be a lease/purchase option under which the Government would construct the necessary capital facilities, lease these to the local jurisdiction, and enter into a lease/purchase agreement where these could be paid back as the population impact is fully realized.

The last area for discussion in alternative financing deals with operations and maintenance. Increased general fund revenues will follow as a result of the repository project. However, the increases may not be sufficient to cover the operating and maintenance costs of new public service facilities. Two mechanisms are suggested to reduce the potential revenue gap in terms of maintenance and operation. These programs should be supported only until the area becomes self-sufficient. They are, first, operating subsidies and, second fixed cost guarantees.

All of the funding mechanisms have advantages and disadvantages. Most likely, they should be used in combination. For enterprise operations such as sewer and water facilities, all financing mechanisms may be feasible. For schools, revenue bonds cannot be used under State law, therefore, either grants, grant/loan combinations or lease/purchase options would be most feasible. For municipal structures, the same holds true. For roads, grants or grant/loan combinations would be applicable.

I appreciate the opportunity to raise these preliminary concerns. Governor Matheson intends to pursue these issues until they are fully resolved or until the State of Utah is no longer a candidate nuclear waste repository site. I hope that all of your deliberations will recognize the potential impacts on State and local governments which this process, and ultimately the siting decision, represent.

Thank you.

Senator SIMPSON. Thank you very much, Mr. Rickers.

Now Mr. Gustafson please.

STATEMENT OF PHILIP F. GUSTAFSON

Mr. GUSTAFSON. Mr. Chairman, committee members, I am presenting my testimony today on behalf of Governor James R. Thompson of Illinois.

I want to direct most consideration to really the need for spent fuel storage capacity, and hence it is mainly title III, and to a lesser extent title IV, that I will be addressing today.

Under the most ideal circumstances, the reprocessing of spent commercial reactor fuel is going to be a number of years in the future, and it is certainly clear there is going to be a need in the interim for additional capacity, that is, capacity in addition to that originally designed and constructed at operating nuclear powerplants in this country. It is also clear, I think, one way to provide such added or necessary capacity is away from reactor spent fuel storage. But I think we feel, in Illinois, this is really biding the issue, and we think that before any type of an AFR can be seriously considered, all the truly viable options of storing fuel at reactors should be exhausted. In other words, AFR's are more or less an escape valve or a result of option of last resort.

The options for onsite storage of spent fuel include the compaction or reracking of existing fuel pools, the actual rod compaction or densification, as it is called, which can appreciably increase the amount of fuel stored on site, the transshipment of spent fuel from one reactor to another, the actual construction of addition pool space at a reactor site, and finally, the dry storage of spent fuel.

We are very pleased to see the bill does address dry storage, which is something that seemingly has not been seriously considered in the past. It is a technique that is being used successfully in Europe and Japan. It is something that we feel could largely do away with the need for AFR's.

In a policy environment which permits and encourages the reprocessing of spent reactor fuel, the need for any sort of an AFR capability is going to be a fairly limited duration, I might go beyond the written testimony and say, whether we reprocess and in that mode get rid of spent fuel, use it up, if you will, or truly dispose of spent fuel, the need for AFR's is going to be a fairly transitory nature and, as it has been said earlier here, we have only so much money to spend on all things and perhaps this is not one of them that needs money spent on it.

In Illinois, we have a feeling that we have developed some positions and ideas which will both serve the national interest and protect the citizens of the State of Illinois. Above all, we do favor the private operation of any sort of an AFR or any sort of spent fuel storage capacity. We do feel that private enterprise does have the wherewithal and the initiative to do this if it is clearly needed. And we would look upon the Federal ownership and operation of AFR's as, again, a last resort.

Certainly space for spent fuel could be leased to the Federal Government, and we support the provision in S. 1662 allowing for actual Federal ownership of the fuel itself. This is quite an acceptable alternative.

If indeed AFR's do become necessary, we do believe they should be located centrally in the regions of need for additional storage

capacity. This would reduce the transportation difficulties and risks attendant on such transportation.

We also feel that four regional AFR's should suffice for the Nation. They should be limited both in size and, going somewhat along with the 2,800 metric tons in the bill, limiting any one AFR to 1,000 metric tons. Again, there should be some finite life for these facilities, and at the time of the site selection and the construction permitting there should be a decommissioning plan and a clear spelling out of the ultimate fate of the fuel that is stored in these facilities. Again, we are sort of backing the position that we don't want to provide a long-range out for solving the problem of final disposition of spent fuel and high-level waste in general.

Along this same vein, any actual siting and operation of a Federal AFR should be permitted only if there is a clear future mode for disposing of spent fuel, and not just allow this as an ongoing stopgap.

Illinois is in a somewhat unique position nationally in regard to AFR's in that the GE facility in Morris, Ill., there exists the only commercial AFR licensed by the NRC, not only to store fuel but to accept further fuel for storage. The matter of additional fuel coming into the State was a matter of recent litigation. It is probably true that in the long run fuel will again move into the State. We are certainly willing to assume a fair share of the national burden in regard to the need for spent fuel storage. Illinois is the largest State in terms of nuclear power production at the present. We certainly propose to take care of our own fuel, very little of which is stored in Morris. It is handled at reactor sites at the present time.

We do want to resist any move that Illinois be the only bearer or recipient of an AFR.

I would like to include for the record a letter that Governor Thompson sent to the Illinois House last year vetoing the amendment that I alluded to above, vetoing the amendment that would prohibit spent fuel coming into Illinois. I think the Governor's remarks in this regard are still timely today, and more or less add substance to what I have said here.

I would like to thank you for the opportunity to come here, and I will answer any questions I can.

Senator SIMPSON. Thank you very much, Mr. Gustafson.

I will have 10 minutes of questions, then Senator Mitchell and Senator Domenici. We will do that so we each have an opportunity.

I would just proceed right down the questions. I think I would ask the first series of questions of Mr. Green, Dr. Fisher, and Mr. Rickers, since I will get back to some specifics with you on interim storage.

S. 1662 establishes this policy of spent fuels unless otherwise processed and high-level radioactive wastes from civilian nuclear activity must be permanently disposed of in a federally owned and operated geologic repository. What are your views on that, and would you agree that all high-level radioactive waste must ultimately be disposed of in a geologic repository, and that interim storage measures, whatever they are, but specifically monitored retrievable storage facilities, cannot serve as a substitute for permanent disposal in a repository?

Mr. GREEN. Senator, we feel that the Nation is looking for a permanent solution. Basically, we think all high-level waste should be disposed of ultimately. We feel that any interim steps perhaps should

be geared toward an onsite situation or perhaps transshipment, and the cost possibly could be borne by the utility. But we think the permanent disposal system is the responsibility of the Government.

Senator SIMPSON. Do you feel, too, these interim things and other methods cannot serve as a substitute for a permanent disposal in a repository?

Mr. RICKERS. We feel, in Utah, that a permanent solution is necessary. We can see really no distinction between the defense-related wastes and civilian-created wastes, that they both create a problem to the public health and public welfare and we should dispose of them at the same time.

Dr. FISHER. I think our point would be we feel there must be an ultimate resolution of the problem. I think the conventional wisdom now is it be permanent. But I think it is important we build into it the contingency to allow us to handle interim contingencies until we solve some of the problems with the permanent disposition. Bear in mind that involves more than getting the hole in the ground and isolating it. There are still some real uncertainties, and I think it would be prudent and judicious to have other kinds of mechanisms at hand in terms of handling it.

Senator SIMPSON. The bill sets a timetable for these elements that would lead to the development of a first repository. Several of you have indicated that you believe that timetable might be overly optimistic. What would be your views on a timetable if we would alter it so it would call for the development of guidelines for repository site selection by 1983, selection of at least three sites or site characterization by 1984, completion of that characterization by 1987, and perhaps an NRC decision on whether to authorize construction of the first repository by, say, the year 1990?

Mr. GREEN. Senator, I am going to defer that to Mr. Forsythe.

Senator SIMPSON. I knew they were going to dump one on you sooner or later.

Mr. GREEN. Had to get him in the act.

Senator SIMPSON. Please go ahead.

Mr. FORSYTHE. The issue of an acclerated timetable is, of course grieviously upon our minds in Mississippi because of the fact the current legislation calls for a 1982 decision on the first couple of sites. We have progressed in Mississippi to the point where, according to the DOE literature and information, we have got right now our phase of area characterization completed, and for the last nearly 10 months we have been in the process of planning for site characterization although we have not finished documentation for collaborative consultation with DOE on the process culminating the area characterization phase of studies. To this end, we have made some disconsonant remarks to DOE. Our philosophy is one, as Mr. Green pointed out in the testimony, of technical conservatism. And if there is a credible time schedule that we note we can be satisfied with, yes, all power to the Senators and the Congress in putting that time schedule before the public. However, we may be overly optimistic in terms of terminology that currently exists today, and we would be very concerned to put any time-limiting factor on a decision so grave as a "permanent" solution—and I put permanent in quotes so the ultimate disposal of nuclear waste could be well thought out.

Senator SIMPSON. Would you give a brief response to that question, please?

Mr. RICKERS. Yes. We are vitally interested because we are one of the salt sites. All three of us sitting here at the table represent States that would be considered for repositories in salt. Our regional study has been done. Our area study is pretty well done. Some of the areas have been eliminated or put into slow cook because of not being completely ideal. We have one area where two sites seem to be viable, one in Lavender Canyon and one in Gibson, west of Monticello, Utah. These two sites are near Canyonlands National Park, but down over a bluff. While the site itself wouldn't be visible, the distance is well traversed.

The Texas studies, as I understand, are not as far along. And the DOE is supposed to provide to all three of us an interchange of studies by the end of this year. Based on the experience that we have had with the Department of Energy on the information that has been submitted to the short suspensions that they have tried to give us on response to that information, I am dubious that a selection could be made among the three States for a test hole before the middle of 1984.

Dr. FISHER. The point of specific timetables are of less real significance, as far as we can see, than a specification of very precisely what we are going to accomplish in whatever time, what kind of work, what kind of evaluation has been done to meet the criteria that have been widely accepted and moved around by the DOE and NRC. So it ultimately comes back, if the Congress sets the timetable, I feel Congress should also instruct the DOE to develop a plan, a rather specific one, on how they are going to do it. What I am talking about here is some very specific points with decision points, what it takes to support those. That could be done in consultation with the States. And you could instruct them to report back to you in 60 days on precisely what that step would be. When we look at that, then we know what we have to do, what has to be done and then the timetables of 1982, 1983, 1984 becomes more meaningful. It is a question of what we are going to do and what we have to do.

Senator SIMPSON. One further question on this round. It has to do with the second geologic repository. This bill contains a mandatory national survey program to be completed by 1988 leading to the identification of sites for a second geologic repository for high-level waste. I would like to know your views. Do you support the proposition no State with potential sites should be able to refuse to participate in such a program? Then I would also throw in the bill requires one of the factors to be considered in selecting the site for the second repository is cost and impact on the transportation of the waste and advantages of geographical distribution in the siting of repositories. I would like to know your views on that, as to whether you agree there is a need for geographic distribution or regional distribution of these repositories, particularly if the first repository should be in the West or Southwest. I would like your views on that.

Dr. FISHER. Mr. Chairman, I would like to say very strongly on our behalf we think this is a very critical and essential one. An important aspect of this is some perception of equity. Unless you can get that geographical spread in terms of media, this thing is going to be a long time being solved, whether we pass bills or what. And that

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is critical. We have salt deposits, rather substantial ones. They are not all in the Southwest. There are rather substantial amounts of salt in other parts of the country, some of these close to where waste is being generated. I think to have a rigorous consideration of all possible media for disposal in the State would be in the very real sense of a perception of equity, which we think is absolutely critical.

Senator SIMPSON. My 10 minutes have expired, and I yield to Senator Mitchell.

Senator MITCHELL. I would like to ask a question on a slightly different part of the bill. You gentlemen are all State officials. Indeed, I guess everybody who has testified today is a State official. We have had Governors and representatives of Governors. Much of the discussion has focused on the necessity of providing full participation by the States in the process. Senator Domenici commented on the strengthening of the bill that occurred in the Energy Committee.

There is another part of the bill I am concerned may have an opposite effect with respect to the interim licensing provisions in this bill, and let me pose the question by setting forth a specific situation that is now occurring in my State, and I ask you to consider that were it occurring in your State and get your reaction.

There is a plant in Maine where the operator of the plant has petitioned for expansion of storage by reracking and by compacting. I guess you call that in your statement, Mr. Gustafson, reracking and densification.

Mr. GUSTAFSON. Yes.

Senator MITCHELL. Both of them. And also it would provide storage for the useful life of the plant. And according to the testimony at a hearing some months ago when we had the commissioners here, no application of that sort has yet been approved in this country. Were it to be approved, it would be the first one.

Now the State of Maine has intervened in the process because this is a matter of grave concern to the people of our State, and the State wants a hearing, a lot of issues of public safety that they feel, the attorney general feels and the Governor feels ought to be raised. If this bill passes, under section 312 and 313, the applicant could withdraw the petition, file a new one, and the State could be denied a hearing because we have a so-called expedited process here that permits the interim grant of approval of a petition without a public hearing.

Now you stress, all of you more or less in some degree, the importance of State participation in the ultimate siting decision. I think that is something we all share. Does this aspect of the bill concern you, the possible contradiction of State authority or State officials who feel they want to participate in the process in behalf of the people of their State? Have any of you studied that aspect of the bill? Do you have any comment on it?

Mr. FORSYTHE. Just briefly, Senator, we have looked at that because we have been through the same process in Mississippi with the operating license of the Grand Gulf nuclear facility. Like the State of Maine, we have gone through some disconserting moments about what the role of the State should be. We know we have a right through part 2 of 10 CFR to participate because of an interested

party. I think the point you are raising is not whether the State has that right, but how it should be authorized to exercise that right and when it should be exercising that right. We are in accord with, I believe, what your philosophy might be, and that being that the State should be given full rights of partnership regardless of what the action might be in terms of either semipermanent, permanent, or ultimate disposal technologies, reracking, fuel densification, and a permanent repository.

Senator MITCHELL. Anybody else care to comment on that?

Mr. GUSTAFSON. As far as the reracking or anything to do with spent fuel storage on site, the State of Illinois has participated in hearings on all of these to date in the State. And were it not for someone else requesting a hearing, I am certain that the State would have done so. We would certainly like to maintain the option of being involved with any matters relating to nuclear facilities in the State, and we do have, I feel, a good working relationship at the present time with the Nuclear Regulatory Commission. We are well aware of what the utilities basically are proposing to do, and I would think we would not want to see anything that would hinder this interaction, which I think in many cases is beneficial to all concerned really.

Senator MITCHELL. I can't tell from that whether you are for or against this provision in the bill.

Mr. GUSTAFSON. I would favor it.

Senator MITCHELL. You favor it, even though you recognize that your right representing a State to get a hearing is served?

Mr. GUSTAFSON. No; I don't favor that. I do not favor that provision.

Senator MITCHELL. I see. All right, anybody else care to comment?

Mr. RICKERS. I would just comment. We in Utah don't expect a nuclear fuel generating plant until after the year 2000, but we would be interested in participating in any decision and would not like to have that right abrogated.

Senator MITCHELL. I guess what concerns me is there is no disagreement that States that are affected ought to have full participation in the process of siting of a permanent repository. The only question is how to do it most effectively from the State level. The fact of the matter is that is going to involve very few States and few decisions. On the other hand, the interim license applications are going to be, simply because there are a lot more operating plants than there will be permanent respositories involved, a substantially large number of States and substantially larger number of people, albeit the gravity and magnitude of the decision is not on the order of where the permanent repository is going to be. I guess what concerns me is although this bill in total appears to give States a lot of participation in the process, the net effect may be by adding participation in one area and subtracting it in another, States may have less of a role in the total process than they had before it began. I am not saying that is the case. That is a concern I have, driven mainly by the situation in my own State.

I don't have any more questions, Mr. Chairman. I just wanted to express that concern. I thank you gentlemen for your testimony and comments.

Senator SIMPSON. Thank you, Senator.

Senator Domenici?

Senator DOMENICI. Mr. Chairman, I have a few questions.

First of all, with reference to Senator Mitchell's concern, I don't read the section as you do, Senator, but I am willing to work with you on it. I read the two sections to say, if you are talking about reracking or densification, that at the present time you have an automatic right to be a participant in a hearing, which I assume we have been told is causing a great deal of delay. We don't have an AFR situation in place yet and we don't have a "storage facility," in quotation marks. And this provision does not deny a hearing, but rather if the NRC finds absolutely no justification at all for a hearing, they need not grant one. That is how I read it. Which would, for those kinds of situations in the interest of getting on with what everybody has said is part of the interim solution, which is reracking and densification, that NRC which has originally licensed and has a continuing oversight would determine if there are some issues or not. If they found there are none, they would proceed. If they find there are some, you have a hearing.

I think one could doctor that up a bit if it concerns you. I don't see it as that big a concern. In your State, I think if there is a genuine interest on the part of the bone fide public servants who are not part of the antagonism against but rather are concerned, I would assume they would get a hearing. But that is how I read it, and I would be glad to work with you. I see your concern. You don't want to be inconsistent, granting more State participation and then watering it down immensely in areas of great concern.

Senator MITCHELL. This is something, if the Senator would yield, that the chairman and I had some experience with in the NRC appropriations bill. This matter came up, and we have talked about it at some length. I guess I say from my own standpoint there has been a lot of discussion about delay, and I suppose there must be something there or there wouldn't be so much discussion. I am also concerned because those things have appeared so long as everybody accepts it as a fact without careful analysis of the underlying situation. I don't want to belabor this. I have to go to another meeting.

Senator SIMPSON. Let me share with both of you that the language in the bill tries to emulate what we did with regard to the interim operating material, interim operating authority, and also has to do with this hybrid hearing, which we might find is going to be rather appropriate. But it is not a totally novel shot.

Senator MITCHELL. Thank you, Mr. Chairman.

Senator DOMENICI. Mr. Chairman, I appreciate the opportunity to inquire now. I know you have a lot to do, and I must leave in about 10 minutes, so I will proceed. May I do that?

Senator SIMPSON. You have the full 10 minutes.

Senator DOMENICI. Mr. Green, you indicated you want something solved on the defense waste at the same time. Now I don't understand. I am on the same side that you are, on that, but I wonder what your reasoning is for wanting that. Are you concerned that if we proceed with civilian permanent storage that we haven't necessarily formulated any rules and regulations regarding defense, and therefore, as a national strategy, we have left something running by itself, and you would like them in the same posture on both, or

is your opposition merely that they both ought to be treated the same as a matter of science and technology?

Mr. GREEN. As a matter of science and principle, Senator, we feel that defense waste could endanger somebody's life just like commerically generated waste, and in the end perhaps should be treated equally.

Senator DOMENICI. Well, I have a slightly different concern. It does appear to me that they are the same in basic principle and the solution is the same, and absent some clear determination that there is some reason to treat military differently, it appears to me we should have the same kind of people problem, the same kind of State concern problem for both, and I am always suspicious if you leave one whole part of it unprescribed. Here we go through all this trouble on civilian only to find something else is running on its own. Do any of you share that concern? I mean if you have an adequate repository that is being looked at for civilian, I guarantee you the military problem is worse, they all say. Now we are going through all this prescription of participation and in 2 years we may find the military saying, "We are really in bad shape," and come back to you and say because it is military we are going to do it. Do you understand what I am saying? I just don't think they ought to do that. I think they ought to submit to the fact if we have to do it in secret, I find most of it yields no information. Do any of you have a comment on that? The gentleman from Texas.

Dr. FISHER. I have no particular comment other than agreeing with the point you are making.

Senator DOMENICI. The gentleman from Utah, I appreciated your long dissertation on impact assistance. What if we were moving an airbase to one of the places in Utah, would you ask us to build your sewers, would you ask us to build new roads, would you ask us to put up money to build your schools? Conversely, if we were going to expand on a military base in your State, would you make all these demands? And what if we were to say, fine, we don't like the economic development that comes from 3,000 military men in your cities, since we can't help you with your economic problems, we will move it elsewhere. How would you respond to that?

Mr. RICKERS. Sir, the suggestions I have made in many cases would cause the Federal Government to be reimbursed as a part of the process. In answer to your question, we had that same situation face us recently with the MX, where a base was proposed to be installed in Utah. We felt we had an impact in some of the communities where it would be near. That would give us these same problems. This material that I presented was taken much from a paper that was prepared for the MX situation. Given the situation that we did not have MX and a base might be proposed, I think that it is fair to say the base would provide its own facilities as far as sanitary landfills, water systems, wastewater treatment. For those that would live off base, we might face the same problem on providing the facilities, but it might be viewed differently.

Senator DOMENICI. Well, I would tend to think that unless you have different evidence than I, that there is such a difference between MX and the location of one permanent disposal site. It doesn't seem to me the pull out of MX has similar requirements. We happen

to have one of these depositories going in our State. As you know, they are concerned about the roads. But to the point once the agreement of consultation and concurrence has been entered into, it doesn't seem to me they are treating it any different than some other economic enterprise.

If you don't like my military suggestion, how about IMB? It would seem to me you would be delighted to have 5,000 workers from IMB join your cities. I don't think they build their sewers, I don't think they live onsite. I can't imagine Utah saying, "We don't want you in Utah unless you build the sewer that goes into the city," and so on.

Mr. RICKERS. First of all, we would be able to tax IMB. Second, take the Intermountain powerplant, a 3,000 megawatt coal-fired system which is going in near Delta, Utah. We have arranged with them for some front end funding. This will alleviate the situations that we are speaking of here. When we are speaking of this nuclear waste repository, we are talking about a community in southeastern Utah, one of them that probably has less than 1,000 people, the other has less than 5,000 people.

Senator DOMENICI. Well, I tell you I know about the powerplant and I am not adverse to negotiating even the taxable nature of the project. We happen to have a number of Federal establishments, and we would gladly subsititute just plain taxation of the facilities for all these formulas for impact assistance. But I really think what you are saying, it is very difficult to sell people on a nuclear depository and it might be easier to sell them on it if you have impact assistance. If I support it, it will be on that basis, because I have been through it and I understand the difficulty any Governor is going to have.

Now let me ask the technical people present if they have seen the agreement between the State of New Mexico and the Department of Energy for the waste isolation pilot project. Have any of the technical reviewed that?

Dr. FISHER. No, I have not. I am generally familiar with it.

Senator DOMENICI. Mr. Chairman, I would ask, if you see fit, that you have staff reproduce that agreement in sufficient quantities—it is a public document—and for the technical people, such as those here, that we send them that agreement. Much of what you described, the gentleman from Texas, Dr. Fisher, many of the parameters that you say we ought to define, the guidelines, when occasions arise that are significant events that have to be agreed upon, timetable—it is absolutely amazing that under a very short, little statute saying that they shall consult together and enter into an agreement on the happening of all major events that have any impact on health or welfare—that the negotiating teams, there is one from the State and Federal Government, have done all the things you have said and put them in an agreement, literally, and then put some general provisions how you resolve the disputes, and then put in an arbitration provision that if you have any of those major ones that is a dispute, scientists resolve the dispute, and literally the Federal Government is bound by the arbitration. They find another way. They don't abandon the project, which is the difference between concurrence and veto, which nobody seems to understand when you talk about concurrence. They say yes, so long as it isn't veto. But what if you arrive at a

disagreement, you will remain in disagreement—and the scientists have said there is a disagreement—well, you still continue, but what you continue with is to find an alternate way to solve the scientific and technical problem, and you begin agreeing again.

I would like you all to look at it because I don't think we can be too specific in the language, and I would like this committee to be specific enough on the parameters of consultation if what we formulated isn't enough. I don't think we can adopt the entire New Mexico agreement and say here it is. Perhaps you could be of some assistance on that.

Dr. FISHER. I would be glad to. I would appreciate in looking at the New Mexico agreement, I would not suggest all of these be specified in law. I think it is very important, as you refer to in that agreement, to have down specifics, black and white, formal agreements. I would point out arrangements with DOE have been quite good, but they have also been informal, and we are at the point where something in black and white would be helpful.

Senator DOMENICI. Mr. Chairman, I have one last question for the representatives of the States since they are going through the onerous process and since they don't have a Federal law that defines the concurrence. I would like to say here for the record, Mr. Chairman, I think because we don't have an existing national statute that regulates the input of State government, that we stand very close to losing the potential for those States ever agreeing with us. I think what is going to happen is if we don't get some parameters quick, from what I understand is going on in Mississippi, for instance, they will be so angry by the time we get this law that politically it will be too late to correct the damage. I don't know about Texas or Utah.

Mr. RICKERS. We are kind of in between at this point.

Senator DOMENICI. It surely would seem to me we ought to ask them what we can do to alleviate the situation in this interim. What if we are not going to get this bill, you might ask yourself as one who is far more concerned and has more to do with this than I? What do we do? Should we consider passing a concurrence and consultation statute if we can't get anything so we alleviate this dilemma? The Senator from Mississippi has told me there are thousands of meetings going on to oppose a process we haven't started. We are going to start this process soon. I know what is going to happen. If we don't get it into a regiment that is understandable, you are not going to have a political leader in the State that is going to be able to come back in the process. Do I kind of state the position as you see it from Mississippi?

Mr. GREEN. Yes, sir, that is correct. It is beginning to get a little volatile down there. Anything you do would be a help to us. We had the situation in Mississippi back in the midsixties of a salt dome being used for nuclear testing, and scientific studies apparently were not done with the knowledge or consultation with the State, and, of course, hindsight is 20/20.

Senator SIMPSON. Excuse me. I would interrupt. I would thank Senator Domenici and would indicate to you that indeed I will furnish to each of you the information from the waste isolation pilot project so you may review that, and especially with regard to the agreement and the concurrence and consultation process. After you do that,

then please share your thoughts with us because we are at the markup stage. I don't know what you want to tell them. They don't need to be alarmed at this point in your State as to what we are doing here until you have had the opportunity to furnish us information that may well diffuse that type of excitement down there.

Senator DOMENICI. Thank you very much, Mr. Chairman.

Senator SIMPSON. Now, please conclude. I wanted to catch Pete before he left.

Mr. GREEN. The way that the Tatum situation was done did not give confidence in the public. They are afraid this nuclear siting policy will follow the same lines and we will get something jammed down our throats, so to speak. But any help to help us diffuse this situation would be a help.

Another problem we have is the lack of public knowledge. The people are afraid. And even if you are afraid of the dark, the fear is real. I can sit here and say, "Well, there are no bugbears out there," but until you are ready to accept that you still have fear. So we really need to demonstrate something to the people they can believe in.

Senator SIMPSON. Well, that, of course, is the very talisman of this operation. Since I have been with the Nuclear Regulation Subcommittee, the greatest hurdle we have had, whether we are talking about Three Mile Island or nuclear facilities, is the minute you have used the word "nuclear" it is transposed immediately to plain, raw fear, and that is what we have to deal with and come back to reason, and somewhere reason lurks in this area. And I try to get back to it, and the ranking member has been more than helpful, and when people begin to launch off into those areas of fear and high hold hysteria we try to get them back to somewhere near the Earth for a while, because we are using it and the trouble is we have got to do something about it. For 30 years we have dogged it, and there is no time to dog it any further.

So you will help us when we furnish you some things. I think it will be helpful for you to look at it as State and then say if you are up to that. We can even work that in to perhaps the legislation or the regulatory process, and we will work with you and do so. Because there are many of us who I think you notice have been State legislators and have been through the early fires of how it works at the State level when you have a national legislature telling you good things, and you know when a were in the legislature it wasn't always that way.

Just a few more questions, if I may, and then I think we will conclude.

Do you believe this bill, as you have reviewed it now, includes a sufficient commitment to the second repository, to at least assure that we will have a second repository? Do you think it would be appropriate to provide a stronger commitment as to that facility, together with perhaps even a statutory schedule or timetable for its development? Would it be advisable to strengthen the commitment in the bill to the regional location of those repositories? It is kind of a several-pronged question.

Dr. FISHER. Mr. Chairman, I should think anything that would tend to emphasize the regional distribution of this burden—and it is perceived as a burden in any community that you approach—would be most desirable and quite effective in the long run.

Senator SIMPSON. Do you share that view? I think you do.

Mr. RICKERS. Yes.

Senator SIMPSON. The reporter will show two heads nodded.

Let me ask another question. S. 1662 calls for the development of a test and evaluation facility. That is for the purpose of developing the packing, the handling, the implacement technology, the real things of repository nomenclature for solidified high-level waste and spent fuel needed to further the demonstration of nuclear waste disposal, its proper use of disposal. What are your views on the need for such a facility?

Mr. GREEN. We in Mississippi are not clear as to the need for it, maybe at the national level there is an explanation. But, as you know, on the Nevada test site, the Climax facility, it is a small facility, but you can test the handling procedures of spent fuel there. We don't understand is there a real need for a larger facility than there. If there is, what is it? We get the impression sometimes maybe this thing is just for show or something, or perhaps if the climax facility was made more public somehow to where the public knew that this operation was going on and it was in a safe situation another one may not be necessary.

Senator SIMPSON. That is helpful.

Mr. RICKERS. As far as we are concerned, our task force has reviewed the Climax mine at the Nevada test site. They also have been to the Hanford site. We again are in the same position as Mississippi is. We feel that the shipping problem has been solved. We feel that the problem of packaging the material and then placing it in the repository has been solved, maybe not to the most economical means, but it has been demonstrated that it is feasible and implacement is feasible at the Climax site. This may negate the necessity for a test and evaluation facility. We question the need for a test and evaluation facility because once it is in place, it may very well be it will be so expensive and put out of operation and a final repository. There may be some undesirable features that would be neglected because of that capital investment. In addition, we feel that the National Environmental Policy Act has not really considered alternatives if you wind up with a test and evaluation facility which is later converted to a final repository, you have not had the opportunity to have all alternatives considered to find the best place, nor have you had the advantage of an NRC license that would go in and test the license for the facilities.

Senator SIMPSON. Well, those are the things we will be pursuing under this bill. The test and evaluation facility would be located at one of the three sites to be characterized for purpose of siting the first repository, and if it is to be at that site that may later be used for full-scale repository, is that a question, or will it be preferable to locate that facility in another location, perhaps at an existing DOE research center and development site to assure it is not, as you suggest, a back door means to develop the first full-scale repository, and that is your concern.

Dr. FISHER. That is precisely it. If you do have one, it is in some place, it will be treated tantamount to actual selection of a repository, because the momentum would be in that direction very clearly.

Senator SIMPSON. Just one more of your group, and then two of Mr. Gustafson will conclude.

The bill provides that the monitored retrievable storage facility cannot constitute an alternative to the disposal of high-level waste in a

geologic repository. The bill also requires that the monitoring retrievable facility must be integrated with the permanent disposal and interim spent fuel storage of the fuel. Do you agree with those? Are they sufficient that the permanent disposal in geologic repositories is carried out?

Mr. FORSYTHE. Yes, Senator, we see these as intermediary steps toward a final disposal. The MRS, the AFR, the onsite storage are all stopgap measures, but they are just that and no further. Ultimately, disposal is the end product that we are looking for.

Senator SIMPSON. Mr. Gustafson, the bill that we intend to mark up establishes the policy that the electric utilities bear the primary responsibility for the interim storage of spent fuel from civilian nuclear powerplants. However, the bill also establishes the policy that it is the responsibility of the Federal Government to provide a limited amount of away from reactor spent fuel storage capacity to assure that the operation of nuclear powerplants is not disrupted due to an inability to provide sufficient onsite spent fuel storage capacity. What are your views on that policy? And then, do you believe that the capacity limit of 2,800 metric tons on the Federal AFR contained in 1662 is appropriate to carry out the policy objectives of this bill?

Mr. GUSTAFSON. Taking the first question first, it is our feeling that the commercial sector, that the reactors can handle their spent fuel needs until reprocessing or eventual disposal take over in the next 10, 15 years, and that if they are given a clear signal that it is their responsibility they will act accordingly.

The second question has to do with the need for some backup, and that is the way we would view any sort of AFR, be it commercially operated or operated by the Federal Government, as a fallback position, not so much if they can't meet their normal storage needs, but what if there is some reason for closing a pool or otherwise have major problems in an existing operating reactor. I think it would be wise to have some sort of fallback position, which is certainly one of the prime uses we see for the GE-Morris facility is in that emergency mode.

The 2,800-metric-ton figure sounds reasonable in light of what we have seen of the DOE studies on the shortfall of storage space that occurs over the next 7 or 8 years. But again, this is somewhat of a numbers game. I don't think it is an unreasonable figure. I wouldn't want to defend it in court, should I say.

Senator SIMPSON. Well, we all use our own figures here. We want to just be certain that it is possible that we have sufficient onsite storage of spent fuel, that that can be provided in a timely manner to guarantee no reactor will lose a full core capacity. That would seem to be a counterproductive result.

So I thank you very much. There will be written questions that other members of the subcommittee may wish to address to you, and I would ask your response. I have some other questions I will submit in writing. You have been very helpful to us, and I can just say to you this. I understand your concern and I hear what you are saying, and that is why I think this hearing has been a very important one for us. Thank you very much. I appreciate your being here.

That will conclude the hearing.

[Whereupon, at 4:45 p.m., the subcommittee recessed, to reconvene subject to call of the Chair.]

[Statements submitted for the record and the bill, S. 1662 follow:]

TESTIMONY OF RICHARD W. RILEY

GOVERNOR OF SOUTH CAROLINA

BEFORE THE

UNITED STATES SENATE

SUBCOMMITTEE ON NUCLEAR REGULATION

of the

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

November 9, 1981

Mr. Chairman

Members of the Subcommittee

I. INTRODUCTION

As Governor of the State of South Carolina, a state which bears a heavy burden of this nation's nuclear waste, I appreciate the opportunity to address you today on the need to establish in law a national policy and program for the permanent disposal of high-level radioactive wastes.

I want to compliment you, Mr. Chairman, and the Members of the Subcommittee, for addressing this matter. It is a difficult task, but one which must be carried out if we, as a nation, are going to solve our nuclear waste problem.

We in the states are now contending with a vast array of programs, proposals, and promises related to either having large amounts of waste stored in our midst or the prospect of having large amounts of waste buried in our midst. None of us are certain of our fate because of changing federal approaches to the problem and the lack of a clear federal policy. The very least we expect is for Congress to enact a nuclear waste policy act that clearly establishes both guiding policy and basic procedures on how the goal of permanent disposal is to be accomplished.

Based on my experience as Governor, and as Chairman of the President's State Planning Council on Radioactive Waste Management, I believe there are several principle elements which must be included in a nuclear waste policy act. Let me summarize these elements in relation to Senate Bill 1662.

II. PERMANENT DISPOSAL

The singular purpose of this act must be to establish a policy and create a program for the permanent disposal of high-level radioactive wastes. This Congressional statement of national policy should include: (a) a timetable for the key decisions which must be made in the repository development program; (b) procedures which enable state and tribal governments to participate effectively in the decisions relating to the development of repositories within their jurisdictions; (c) the full application of NRC licensing and NEPA review; (d) Congressionally defined limitations on any test and evaluation (T & E) facilities that are to be constructed; and (e) a cost-recovery mechanism to ensure regular funding of the program by the generators of the waste.

I am pleased to see that S. 1662 addresses all of these major points. I would, however, like to suggest several changes in the bill which would strengthen this repository program.

(1) Sec. 701.(b) states that affected states and tribes will "have the right to participate in a process of consultation and concurrence... in all stages of the planning, siting, development, construction, and operation of a repository...". But then this same section goes on to state that the Secretary of Energy shall enter into written agreements with affected states and tribes only <u>after</u> the decision has been made to undertake detailed site characterization. The Secretary should be required to negotiate written agreements with states and tribes as soon as possible after he has notified them of "potentially acceptable sites" within their jurisdictions (as described in Sec. 701.(a)). The sooner state and tribal officials

are actively involved with Federal officials in the implementation of this program, the greater will be the likelihood that we can rebuild public confidence in this national effort.

(2) Affected states and tribes should be given a formal role in the President's decision to undertake detailed site characterization. The legislation, as it is now written (Sec. 403.(b), (c) and Title VII), is silent on this matter. I recommend that the legislation explicitly provide the opportunity for a state or a tribe to object to the Secretary's recommendation for detailed site characterization and that any objection be sent to the President, along with the Secretary's recommendation, for consideration prior to the President's final decision.

(3) Greater emphasis should be given to the characterization and development of multiple sites. This will give us a greater range of possibilities to choose from should any particular site or geologic medium prove unsuitable for a repository after full site characterization.

(4) I am concerned that the timetable spelled out in S. 1662 (Sec. 403.(b) and Sec. 405.(b), (e)), may now allow sufficient time for careful, technically conservative examination of the proposed sites or for adequate implementation of consultation and concurrence procedures. In addition, the test and evaluation facility authorized in Sec. 407 will not be operational until three years after the license application for the first repository has been submitted. As

a result, we will not have the benefit of the test and evaluation findings when preparing the license application. I recommend consultations with Department of Energy and NRC staff on possible modifications of this timetable.

(5) The repository program defined in S. 1662 (Title IV) is designed to handle only those wastes generated from civilian nuclear activities. This is a substantial departure from the bills adopted overwhelmingly by both houses of the 96th Congress. I realize that there are precedents for separating the civilian and military applications of nuclear technology, but in the matter of nuclear waste disposal, I believe that these precedents should not apply.

I am not proposing any imposition of new authorities that may compromise the secure integrity of nuclear installations like Savannah River Plant.

The placement of canisters of solidified wastes in a permanent disposal site with commercial wastes, however, simply does not offer an opportunity to compromise our national security.

By separating the efforts to provide permanent disposal for defense-related nuclear wastes will offer nothing to speed their disposal but will in fact hamper, and possibly prevent, this nation's attempts to permanently isolate all such wastes from our environment.

No progress in the matter of their disposal is, in reality, no progress in permanent disposal of high-level nuclear wastes.

(6) In addition to the current language (Sec. 407.(b)(2)) limiting the size of any test and evaluation facility, the legislation should also limit the duration of such a facility to ensure that it does not become a de facto repository without NRC licensing.

(7) Finally, the cost recovery mechanism defined in Sec. 603.(a) should contain provisions which will allow for future adjustments in the fee charged to generators in order to account for increased costs due to inflation and technical uncertainties. Our experience in operating a low-level radioactive waste disposal site in South Carolina has shown us that fixed-fee cost recovery mechanisms do not make sense in the real world.

III. "TEMPORARY" STORAGE

A number of proposals have been advanced for the development of so-called "temporary" facilities for the storage of spent fuel and high-level wastes. S. 1662 includes two of these; a proposal for one or more federally operated 'away-from-reactor' (AFR) storage facilities (Title III) and a proposal for one or more facilities for the "long-term, retrievable, monitored storage of solidified high-level radioactive waste and spent fuel..." (Title V).

I am opposed to including these provisions in any Congressional legislation defining a national program for the management and disposal of high-level radioactive wastes. Practically speaking, these facilities are no different from those which have existed at the Savannah River Plant and other government installations for over a quarter of a century. They represent our national policy by default.

What the American people are demanding is a change in that policy. They want a solution to this problem. Any legislation which includes program elements that are inherently "non-solutions" can not be characterized as a change in national policy designed to solve this problem.

Including these provisions in this legislation will have several pernicious effects. First, they will divert attention from the primary goal of permanent disposal and thereby delay or defeat efforts to reach a solution. One committee of the U. S. Senate has already accepted an amendment to S. 1662 which says that long term, retrievable storage facilities may be considered a substitute for permanent disposal facilities. We haven't even reached the floor of the Senate yet, and we are already conceding that we don't really want to solve this problem.

Second, these provisions will require the Federal government to use scarce political capital and further undermine its already low credibility in the effort to site facilities which lead us no closer to a solution. It is argued by the proponents of these facilities that it would be easier to site temporary facilities since they are not designed to stay there forever. Anybody who has had any real experience with the siting of a waste facility -- of any kind -- knows that simply is not true. And it is not true because the public has no reason to believe that so-called "temporary" nuclear waste storage facilities are, in fact, temporary.

I have often said that there is a law of political-physics, not written down in any textbook or in any government regulations manual, but well known to the millions of Americans who have had to bear the burden of nuclear waste management in their own states and communities. This unwritten law of political-physics states that:

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"Nuclear waste stays where it is first put." We will not repeal that unwritten law until Congress passes a written law which unequivocally states that the national program to solve our high-level radioactive waste problem is permanent disposal of all present and future wastes.

Third, implementing these proposals will waste scarce fiscal resources which we can ill-afford at this time. The proponents of these measures argue that the Federal government will be fully reimbursed for the costs of these facilities. But even if that proves to be correct, it should be obvious by now that private utilities in this country are in no better shape fiscally than the Federal government. The good ol' days of throwing any amount and kind of monies, public or private, at any given problem are long since gone. Fiscal prudence and public accountability demand that we recognize that fact.

The advocates of "temporary" storage facilities claim that they are needed as relief measures to handle waste materials and spent fuel until such time as a repositories are available for final disposal. But, in truth, these proposals represent a foot in the door by those who would block a final solution to this problem. And if they are allowed to remain in this, or any other nuclear waste legislation, they will succeed in their purpose -- either by preventing passage of a nuclear waste policy act or, if one is passed, by delaying and ultimately halting efforts to find a permanent disposal solution.

With respect to the storage of spent fuel, I believe that the utility industry should bear responsibility for this task and that they should carry out this responsibility to the maximum extent possible at the site of the reactor which generates the spent

fuel. This is the policy proposed by the President's State Planning Council on Radioactive Waste Management. It is the policy adopted by the current administration and reaffirmed in the President's recent policy statement on nuclear power.

It is argued that Federal AFR's are needed in order to prevent reactors from shutting down operation in the late 1980's. But every year for the past three years the official estimates of how much capacity will be needed in Federal AFR's have dropped dramatically. And every year for the past three years the official estimate of when this capacity would be needed have stretched further and further into the future.

In part these changes reflect the fact that the Department of Energy's planning base has recognized more and more alternatives to Federal AFR storage. But mostly they reflect the fact that utility companies have rolled up their sleeves and gone to work to solve the storage problem for themselves. With expedited NRC licensing procedures and an aggressive effort by the Department of Energy to demonstrate the feasibility of dry-storage techniques, both called for in Title III of S. 1662, the industry should be able to complete this task.

The vague criteria for the acceptance of spent fuel into a Federal AFR and the lack of clearly defined procedures for determining need based on strict technical grounds are an open invitation to transfer the burden of nuclear waste management to someone else's backyard. Let me give you one example.

Title III, Sec. 311.(a) of this bill calls for the Federal government to encourage the storage of spent fuel at nuclear powerplant sites consistent with -- and I quote -- "...the sensibilities of the population surrounding the power plant." Nowhere is there

any reference -- in any title of this bill -- to the "sensibilities" of the population surrounding the site of a potential Federal AFR. And why should there be? It seems clear the purpose of this policy is to shift the burden of spent fuel management from a large number of communities all across the country to one small community, even if the citizens of that small community find that policy to be unfair and unacceptable.

And this -- Mr. Chairman, and Members of the Subcommittee -- this is precisely the threat which hangs over the people of my state. For over thirty years the citizens of South Carolina have done more than their fair share to shoulder the nation's nuclear waste burden. For a generation now we have hosted the tank farm at the Savannah River Plant. For the last several years we have lived with the threat of becoming the nation's only repository for the disposal of commercial low-level radioactive waste. And now we are faced with the prospect of having thousands of tons of spent fuel shipped into our state and stored for an indefinite period of time.

South Carolina will not be the path of least political resistance in seeking a national solution to a national problem. By taking action on low-level waste we moved the Congress to establish in P.L. 96-573, a national policy which requires each state to assume responsibility for the management and disposal of low-level wastes generated within its borders. Now we are asking Congress to establish a similar policy to ensure that states assume their proper responsibility for assuming the safe storage of their own spent nuclear fuel.

It would be irresponsible for South Carolina to make it easy, by our acquiescence, to resolve the "temporary" problem of spent fuel storage. If we allowed this national

problem to be isolated into one small corner of our state, this would inevitably reduce the sense of urgency which is needed to ensure that a final solution to the nuclear waste disposal problem is achieved. That would not be acting in the national interest.

Again, I thank you for the opportunity to speak to you on this subject. I will be happy to answer any questions the Subcommittee may wish to ask.

STATEMENT OF WILLIAM F. WINTER
GOVERNOR OF STATE OF MISSISSIPPI
BEFORE
SUBCOMMITTEE ON NUCLEAR REGULATION
OF
THE SENATE COMMITTEE ON ENVIRONMENT
AND PUBLIC WORKS

NOVEMBER 9, 1981

It is imperative that Congress establish statutory procedures, guidelines, and provisions to address the needs of the nation in solving the complex and controversial issues surrounding the Nuclear Waste problem. There is a national interest involved in planning for, and in the siting of facilities that are necessary to meet requirements which are other than local in nature and benefit the needs of the nation. The Congress can ill afford to leave the resolution thereof to chance through the presently unpredictable procedure of agency regulations devoid of Policy directions.

The waste management problem can not be solved in a manner that ensures public acceptance by a Federal process alone. It must be based upon a strong and knowledgeable involvement of State, Local governments and private sector.

The States should have the positive expectation that there will be an effective mechanism for guaranteeing that Federal activities will be in accord with a regional management plan that protects the welfare of its people. Prior controversies have demonstrated that consultation with and concurrence by states is needed when Federal activities do not conform to state planning and environmental objectives. Recent examples would be the offshore oil and gas leasing and the relocation of the Cuban and Haitian refugees.

There appears to be a fundamental shift occurring in the balance between Federal and State environmental responsibilities. The Federal government is moving from a strong regulatory stance,

and the regulatory efforts by the states to manage their states' development toward selected objectives within a desired environment are growing. This calls for consultation and concurrence whenever possible.

Mr. Chairman, we in Mississippi appreciate the complex and controversial nature of the overall problem, and therefore, appreciate your efforts in Congress in addressing the issue and attempting to solve them in an equitable manner. I feel that earlier legislative direction addressing the nuclear waste problem would have eliminated some of the problems and uncertainties that exist in my State of Mississippi.

The State of Mississippi has attempted negotiations for nearly 18 months to formally develop the processes of consultation and concurrence through a written agreement with the Department of Energy. Our efforts to this point have been futile. We have requested a mechanism for conflict resolution be incorporated into the agreement so as to settle technical disputes which might and have arisen out of areas such as site characterization studies in Mississippi. The position of our state agencies is that the amount of work done to date on the salt domes has been inadequate and insufficient to make a decision to eliminate any dome or retain any dome in the Gulf region. The U.S. Geological Survey, Office of Hazardous Waste Hydrology, has also expressed concern over the paucity of the data upon which the screening decisions were made. A copy of said letter is attached for your consideration. This is why I today endorse the proposal in Senate Bill 1662 calling for increased efforts

in consulting and cooperating with state and local governments.

I feel the mechanism as provided for in Senate Bill 1662 toward a development of a Federal-State partnership through a negotiated consultation and concurrence agreement within one year after the selection of a site for detailed site characterization is much too late in the process of site screening. This agreement should be in place prior to the initiation of any detailed site characterization planning and field study activities so as to present a unified best mind approach, thus saving money, time and confusion.

The ultimate disposal of high-level waste must have the highest priority, and the solution must be accomplished through utilizing available technologies. Therefore, we endorse the adoption of a realistic time table leading to the establishment of a permanent repository devoid of political influence. However, I strongly insist that a sound technically conservative program is essential. Thorough investigation of each candidate site should be accomplished, because if it is not, and a failure should result, additional public mistrust of the nuclear industry will be the inevitable result. The time frame established in Senate Bill 1662, from our experience, is too short, and may compel the Department of Energy to select a site which may have received extensive, but incomplete or inconclusive study.

I believe the majority of the Governors endorse the concept of the States' having the right to raise objections before the Congress. Most of the legislation now before the two Houses of Congress has a process for states to appeal to Congress

objecting to a decision on siting a repository, and in the case of Senate Bill 1662, a retrievable, monitored storage facility. In most of the legislation, the State raising an objection is placed in the unenviable situation of having to persuade at least one of the Houses of Congress to sustain its objection. The State of Mississippi has been on the record, encouraging the Congress to enact a provision which would require a two-house override of a state objection. Resolution 4-10 of the Presidential State Planning Council on Radio-Active Waste Management supported the two-house override concept.

Senate Bill 1662 is conspicuously mute on the subject of defense wastes disposal. Presently the volume of defense generated waste greatly exceeds that of the commercially generated wastes. The physical nature (liquid) of the bulk of these defense wastes presents more of an environmental problem, as well as a greater potential risk to the health and safety of the public, than the commercially generated spent fuel (solid). It is my opinion that a comprehensive national waste policy that is truly concerned with the health and safety of the public must address this issue head-on.

There are several states which now enjoy either a guaranteed right of objection to the development of a repository, such as Louisiana, or a mechanism of resolving conflicts, such as New Mexico. I will continue my efforts to secure for our State the same right of objection afforded our sister state, especially in light of the fact that the geologic regimes in both our states are the same and found no where else in this nation,

except in eastern Texas which, I am apprised, has had all of her domes deferred from further study due to various and sundry reasons. I must maintain this posture as I am a strong advocate of equitable treatment of the states by the Federal Government.

It is essential that the presence of human population be addressed prior to the initiation of any site characterizations, whether the decision making process leads to the development of a permanent repository, a test and evaluation facility or a monitored, retrievable storage facility. This philosophy, if applied on a national basis, would not eliminate eastern states with potentially suitable geologic features from being a host to a repository.

The National Governors' Association in their August, 1980, policy declaration asserted that greater attention should be directed to the issue of impact assistance. I was disappointed that Senate Bill 1662 did not specifically address the issue. It has been pointed out to me that in Mississippi adverse economic and psychological factors are already affecting the people in the impacted area. I urge, therefore, that the Congress through the proposed legislation provide a mechanism by which states can negotiate with the federal government for compensation to cover the quantifiable fiscal and social impacts that occur to an area.

Again, I appreciate the opportunity, Mr. Chairman, of presenting these comments on behalf of the State of Mississippi. We believe that our suggestions would strengthen this proposed legislation and the federal/state partnership that is so essential to the success of the program.

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA. 22092

In Reply Refer To:
E&S-Mail Stop 410

June 30, 1981

RECD JUL 6 1981

Mr. Jeff O. Neff
Program Manager, NWTS Program Office
Department of Energy
505 King Avenue
Columbus, Ohio 43201

Dear Jeff,

We have read with interest the ONWI-109 draft report, "Evaluation of Area Studies of the U.S. Gulf Coast Salt Dome Basins." This report presents an evaluation of data obtained from area studies of eight salt domes in the interior basins of the Gulf Coast region. It recommends selecting, for further study, four of the eight domes that appear to have more favorable characteristics for possible nuclear waste repository sites. We have no quarrel with the necessity of winnowing all but the most favorable land units from further consideration at each screening step. However, we are concerned with the level of data needed to make a rational screening decision. The level of data needed for a rational decision is directly related to the predictability of the geohydrology of the land units being considered. The simplistic sites, hydrogeologically are the most predictable, and therefore require the least amount of data to permit a rational decision. As the complexity of the geology and hydrology increases, predictability decreases and the amount of data required for a rational decision increases. Settings with complex geology and hydrology may preclude obtaining sufficient information to make a rational decision. We suggest that tests for assuring that an adequate level of understanding is being applied to the decision include a positive answer to the following question: Are the geology and hydrology of the land unit sufficiently simple that a reasonable expenditure of resources for additional data can be expected to provide sufficient understanding to support a decision that the land unit is suitable for more detailed characterization and screening?

The section on geohydrology contains a simplistic concept of the flow system based on sparse regional and virtually no local data. One of the assumptions made in calculating the traveltime of water from the flank of the dome at repository level to the assessible environment is that no short-circuiting pathways for ground-water flow exist (p. 77, item 2 h). This ignores the possibility that structurally deformed strata near the dome could provide pathways for vertical flow to the accessible environment. An apparent contradiction to this assumption

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is stated in the discussion of dome dissolution, as indicated by salinity concentrations in ground water near the domes. It is stated (p. 129, paragraph 4) that high concentrations of Na^+ and Cl^- alone are not indicative of dome dissolution because they could result from upward leakage of deep saline formation water along fractures.

Some of the unknowns and complexities in the hydrologic system around salt domes and the possibilities of short-circuiting of flow paths by faults, caprock, and shear zones are acknowledged on p. 77. but are not recognized as serious potential flaws in the containment quality of the salt-dome environment. It is stated (p. 125, paragraph 1) that additional test holes will be cored and drilled to investigate the potential for radionuclide transport through the caprock and fractures. In our opinion, presently available techniques are not adequate to characterize the hydrology of the caprock or discontinuities adjacent to or within a dome. The extremely heterogeneous distribution of fracture solution and intergranular porosity of caprock result in a wide range and highly variable distribution of permeability. Although it is conceivable that techniques could be developed to characterize the caprock hydrology, the inherent complexities would make the task very expensive and time-consuming and would doubtless require a very large number of test holes which might jeopardize the integrity of the site. These concerns are documented in a letter dated March 7, 1981, from the Chief, Office of Radiohydrology, U.S. Geological Survey to the Director, Division of Waste Isolation, DOE.

Another issue that should be resolved before proceeding with location characterization studies is that of resources and human intrusion. We now have considerable knowledge regarding existing resources on and around the domes, and about the potential for future exploitation for resources or storage facilities. Special attention should be given to PNL-3190, Solution Mining in Salt Domes of the Gulf Coast Embayment. The essential conclusion of this report is that while salt deposits are vast, dome salt in the Gulf Coast Embayment will be in demand for a variety of purposes and retention of a dome in virgin condition, free of man's exploitation beyond 1000 years will require administrative control. The regulatory agencies agree that institutional controls cannot be relied upon for more than 100 to 200 years. It is not clear how DOE plans to treat the hazard from solution mining for longer periods. ONWI-109 makes no mention of solution mining potential other than to note the shallow depth at Rayburn's. Perhaps an advisory position from NRC should be sought on licensing a repository in these "bulls eye" environments.

Tectonic factors are both under-emphasized and over-emphasized. Faults throughout the region are repeatedly referred to as non-tectonic. Clearly that depends on one's definition of tectonic. Why not call the faults what they are and describe briefly what's known about them--instead of what they are not? If they are known not to involve basement, it could be so stated. It seems unlikely that a fault showing slight Quaternary movement 20 km from Oakwood or Keechi domes would be a serious licensing

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issue. The significance of the offset Quaternary terraces along the Trinity River lies not in the threat a fault may pose to prospective repositories in either Oakwood or Kecchi domes but in the fact that they indicate the domain of active down-to-the-coast faulting may extend much farther inland than is indicated on the map of young faults by Howard and others (1978). Future movement on any fault parallel to the coast must be considered a possibility in the long-term risk assessment for any dome offered for licensing. Although few examples of Quaternary displacement have been documented, such movement is very hard to detect in the environment of the interior salt dome basins.

On p. 130, an unqualified statement is made that the nuclides from a repository will be reduced in the surrounding ground water flow path in the same manner as soluble uranium is reduced to form uranium ore bodies in the Texas coastal plain. As neither the groundwater flow paths around a dome or the chemistry of the groundwater are adequately known, this statement should be qualified or deleted as it appears to be more of an assumption than a statement of fact. Also, nuclides other than uranium display different chemical characteristics and cannot be expected to behave similar to uranium.

Throughout section 5, statements such as, "At the area characterizations stage, it is sufficient to know . . . . ," and "At this stage of investigation data from one or two drill holes are sufficient . . . . ," They appear to be arbitrary and capricious and detract from the credibility of the report.

The recent NRC evaluation of the Gulf interior salt dome program raised questions about whether the concerns could ever be adequately addressed because such a large amount of drilling might impair the basic integrity of the dome. It is suggested that DOE investigate these concerns with an outside panel before millions of dollars are invested in site location and characterization studies.

The organization and style of this report seem incredibly convoluted and difficult to follow. Granted the subject is complex and numerous factors must be weighed. Nevertheless, simplification and clarification should be attempted. In part, the report attempts to follow the outline of DOE/NWTS-4, the National Site Characterizaion and Selection Plan and Environmental Assessment which has been withdrawn and is being revised by ONWI. A clarified version of DOE/NWTS-4 might assist in making this report less convoluted and more readily comprehensible. This report also tries to tie the discussion to ONWI 33-(2), NWTS Program Criteria for Mined Geologic Disposal of Nuclear Waste, Site Performance Criteria, and to an early version of 10 CRF 60, and shifts back and forth between them. This contributes to the confusion and requires correction. Some of the 10 CFR 60, criteria have changed and this report will have to be revised to be consistent with these changes. Perhaps the report should stick to a single set of published general criteria rather than

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trying to hit a moving target. An example of such criteria can be found in Table 2-1 in the now withdrawn Site Characterization Plan (DOE/NWTS-4).

Answers to the questions posed therein would indicate where information remains to be obtained and would provide a very comprehensible and adequate presentation. Some specific questions and comments follow:

What is the vertical head distribution in the Tertiary aquifers regionally and close to the flanks of the dome?

What are the regional and near-dome flow paths in the Tertiary aquifers?

What is the significance of brine pooling in the Perry Basin and of abrupt changes in the depth to the base of fresh water?

What are the vertical hydraulic conductivities of the confining beds?

The existence or non-existence of the "Payne" fault in Louisiana should be resolved.

The discussion on the formation of caprock appears to contain three theories, not two. Some evaluation of the credibility and general acceptance of the various theories by the technical community should be included in this discussion.

The discussion of an impermeable sheath should be deleted as demonstration of its presence intact is a virtual impossibility.

The cross sections of Richton and some other domes do not show any faults over or around the dome. Is this known? Or is the structural information so imperfectly known that no structural interpretation is warranted? The complex structure, both over and around virtually all domes that have been studied in detail, suggests that virtually

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nothing is known regarding the structure of Richton and some of the other domes.

p. 51, paragraph 4: an adequate understanding of the regional hydrology in the Mississippi and Louisiana basins has yet to be achieved. The recent evaluation of the Gulf interior salt domes program by NRC also raised questions regarding the understanding of the regional hydrology of these two basins. It is our understanding that additional work to improve understanding of the regional hydrology will be conducted concurrently with the location phase of the salt dome studies.

p. 55, paragraph 2, last sentence: the basis for this statement has never been established. This and other unsupported statements that are present in this report undermine the credibility of the entire draft and should be deleted.

p. 77, paragraph 2, (b): this assumption is incredibly naive, the principal concern is short circuiting of the flow paths along vertical fractures etc. before reaching this assumed starting point.

p. 77, paragraph 2, (h): this is not a sound assumption. Structural conditions, including the shear zone adjacent to the flank of the dome, as well as caprock on the flank of the dome could provide vertical flow paths of high permeability. How will the presence or absence of such conditions be determined and evaluated? How will the hydrology of caprock on the flanks of domes be determined?

p. 77-79: this scenario and analysis using assumed conditions and hydraulic parameters has no basis in fact.

p. 80, paragraph 2: to make an objective comparison, the decisionmaker in judging the relative characteristics of ground water systems, must have similar data on all domes being evaluated, not varying levels of data.

p. 81, paragraph 4: Units with fracture and solution porosity will require special, and as yet undefined, techniques to obtain the required parameters. For example, how will this data be acquired for caprock?

p. 81, last paragraph: this isn't a valid statement, in our opinion.

p. 83, paragraph 2: not even the direction of slope of the hydraulic gradient around the domes is known. Around most domes salinity control is insufficient to draw any conclusions. Geographic distribution of samples around a dome is not sufficient to determine the presence or absence of a salinity anomaly.

p. 83, last paragraph: this opinion sorely needs support and assistance and, as it stands, is not justified.

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p. 85, paragraph 3-5: current data appear to be insufficient to provide a basis for judgment.

p. 91, paragraph 3: has solution collapse of caprock been considered?

p. 124, 6.2.2.1, paragraph 1: there is no basis in fact for this statement and particularly for assuming the calculations on traveltimes that were computed have any meaning--even the basic scenario is naive and without foundation.

p. 124, next-to-last paragraph (2) we do not believe there is any factual basis for this statement.

p. 125, paragraph 1: is it reasonable to expect that a few test holes in the caprock and around the flanks of a dome can adequately investigate the possibility of short circuiting of ground water flow through fractures or the caprock? Also, how will the hydrologic properties of the fractures and caprock be determined? Currently available techniques are inadequate. The situation is complicated by the heterogeneous and anisotropic nature of the caprock and its vertical orientation on the flanks of the domes.

p. 125, paragraph 2: the near absence of pertinent data makes it understandable why no significant problems were detected.

p. 125, paragraph 3: as noted previously, the naviety of the assumptions involved in these calculations of flow times renders them essentially meaningless. The possibility for vertical flow along pathways created by near-dome structural features, shear zones, etc., has not even been considered.

p. 125, last paragraph: the lack of data, particularly on the effects on ground water flow of near-dome structural complexities, is insufficient to permit evaluation of repository performance. Furthermore, the difficulty in obtaining such data makes it extremely hazardous to predict flow conditions, let alone predicting repository behavior.

p. 129, paragraph 2: the suggestion that hydration of anhydrite to gypsum and of water entering the caprock may be paleo-features that are not active today is a classic example of wishful thinking which lacks even meager support. Your own descriptions of caprock encountered in this testing program indicate that massive anhydrite is not persistent and that fracture and solution porosity and gross heterogeneity is the common mode in caprock. The last sentence in this paragraph should be more specific regarding how growth and/or dissolution rates of different parts of the caprock will be addressed in future work.

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p. 129, last paragraph: It is conceded that upward leakage of water is possible via faults etc., to explain high concentrations of sodium and chloride, whereas, these possible flow paths are ignored in the calculations of the traveltime of water using one-dimensional analysis of vertical ground-water flow on p. 125, paragraph 3. You can't have it both ways and this possibility is certainly more realistic. We suggest that the exercise on traveltimes be modified to ackowledge this reality or be deleted.

p. 131, paragraph 2: structure over and adjacent to the domes is indeed complicated and undoubtedly exerts an important control on ground water flow. It cannot be dismissed as a characteristic of all domes and therefore unimportant to the area characterization stage--simply because data are inadequate for an evaluation at present. In addition to structure resulting from intrusion of the dome, solution collapse structures are a common feature associated with salt domes.

p. 131, paragraph 3: detailed stratigraphic descriptions are indeed present in the referenced reports. What is lacking as any corresponding description of the structure which is of equal concern in evaluating the hydrology around and over a dome. This paragraph ignores the effects of near dome structure and their implications.

p. 135, note following table 6-7: subsidence resulting from solution collapse seems to have been ignored.

Sincerely yours,

Jack Robertson

John B. Robertson
Acting Chief,
Office of Hazardous Waste Hydrology

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TESTIMONY BEFORE THE NUCLEAR REGULATION SUBCOMMITTEE

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS ON S. 1662

UNITED STATES SENATE
SENATOR ALAN K. SIMPSON
SUBCOMMITTEE CHAIRMAN

NOVEMBER 9, 1981

JOHN W. GREEN, JR.
NUCLEAR WASTE PROGRAM MANAGER
MISSISSIPPI ENERGY AND
TRANSPORTATION BOARD
JACKSON, MISSISSIPPI

MR. CHAIRMAN, MEMBERS OF THIS COMMITTEE, IT IS INDEED AN HONOR AND A PRIVILEGE TO PRESENT THIS TESTIMONY CONCERNING THE MATTER OF A NATIONAL WASTE MANAGEMENT POLICY. IT IS REFRESHING TO KNOW THAT RESPONSIBLE ELECTED OFFICIALS AT THE FEDERAL LEVEL ARE ATTACKING THE PROBLEM OF NUCLEAR WASTE MANAGEMENT HEAD-ON. IT IS OUR OPINION, IN MISSISSIPPI, THAT A NATIONAL POLICY IS LONG OVERDUE AND MUST BE ADDRESSED IN ORDER TO MAINTAIN A NUCLEAR-GENERATED ELECTRICAL POWER OPTION FOR THIS NATION. WE ARE OF THE FURTHER OPINION THAT, REGARDLESS OF WHETHER THIS NATION IS TO MAINTAIN A COMMERCIAL NUCLEAR POWER OPTION, WE VITALLY NEED A LEGISLATIVELY-ESTABLISHED, TECHNOLOGICALLY CONSERVATIVE, COMPREHENSIVE NUCLEAR WASTE MANAGEMENT POLICY.

IN KEEPING WITH THAT PHILOSOPHY, I WOULD NOW LIKE TO ADDRESS THE TECHNICAL ISSUES OF NUCLEAR WASTE MANAGEMENT THAT WE HAVE ALREADY EXPERIENCED IN MISSISSIPPI, SOME OF WHICH ARE ADDRESSED IN S.1662. WE WOULD HOPE THAT THE CONGRESS COULD BENEFIT FROM SOME OF OUR EXPERIENCES.

AS EARLY AS 1976, SEVERAL OF THE STATES IN THE GULF INTERIOR REGION WERE APPROACHED BY THE PREDECESSOR OF THE U.S. DOE REQUESTING SOME GENERIC INFORMATION ABOUT ONE OF THE GEOLOGIC FEATURES FOUND IN THOSE STATES, NAMELY DOMED SALT. THE ENERGY AND RESEARCH DEVELOPMENT ADMINISTRATION EVOLVING TO THE DEPARTMENT OF ENERGY, AS WELL AS CHANGING PRIME CONTRACTORS FROM UNION CARBIDE CORPORATION OF THE OAK RIDGE NATIONAL LABORATORY TO THE BATTELLE MEMORIAL INSTITUTE, OFFICE OF NUCLEAR WASTE ISOLATION, CONDUCTED THE FIRST PHASES OF CHARACTERIZATION OF THE INLAND SALT DOMES IN TEXAS, LOUISIANA AND MISSISSIPPI. THAT SERIES OF STUDIES WAS COMPLETED IN 1978 AND RESULTED IN WINNOWING FROM SEVERAL HUNDRED SALT DOMES DOWN TO

8 DOMES, THREE EACH IN TEXAS AND MISSISSIPPI AND TWO IN LOUISIANA. THE REPORTS WERE REPLETE WITH INFORMATION OF QUESTIONABLE VALUE.

IN 1979 AFTER DISCUSSING PRIOR STUDIES WITH SEVERAL STATE OFFICIALS, DOE INITIATED THE AREA CHARACTERIZATION PHASE OF STUDIES IN THREE DISCREET AREAS OF THE GULF INTERIOR REGION SALT DOME BASIN. MINIMAL INFORMATION WAS EXCHANGED BETWEEN THE DOE AND MISSISSIPPI DURING THAT PHASE OF STUDIES WHICH TERMINATED IN TERMS OF PHYSICAL ACTIVITIES IN MID-1980. AT THE TERMINATION OF THE FIELD STUDIES, THE VARIOUS CONTRACTORS AND SUBCONTRACTORS WENT THROUGH THE PROCESS OF PREPARING BOTH ENVIRONMENTAL AND GEOLOGIC CHARACTERIZATION REPORTS OF THE THREE SUBJECT AREAS. THOSE REPORTS, AS WELL AS THE SUMMARY REPORT PREPARED BY BATTELLE WERE RELEASED TO THE STATES FOR REVIEW AND COMMENT IN LATE 1980 AND EARLY 1981. THE STATE OF MISSISSIPPI, AS WELL AS HER TWO SISTER STATES, WAS CAUGHT BEHIND THE JUGGERNAUT OF WHAT THE STATES FELT WAS A NON-TECHNICALLY CONSERVATIVE, METHODICAL STEP-WISE APPROACH USED BY DOE AND ITS CONTRACTORS IN REDUCING TO FOUR THE NUMBER OF CANDIDATE DOMES SUITABLE FOR FURTHER DETAILED CHARACTERIZATION AS A POTENTIAL NUCLEAR WASTE REPOSITORY.

THE INFORMATION UTILIZED BY THE DOE CONTRACTORS IN MAKING THEIR RECOMMENDATIONS WAS FELT TO BE DEFICIENT NOT ONLY BY THE STATES OF MISSISSIPPI AND LOUISIANA, BUT ALSO THE U.S. GEOLOGICAL SURVEY. THE COPY OF THE USGS COMMENTS WERE SUBMITTED AS A PORTION OF THE OFFICIAL TESTIMONY PRESENTED BY MR. DEATON ON GOVERNOR WINTER'S BEHALF. THEY ARE BUT A PORTION OF THE COMMENTS PRESENTED TO DOE INDICATING THE INADEQUACY OF THE DATA AND AT THE SAME TIME INDICATING A NEED FOR FURTHER EVALUATION OF THE EXISTING INFORMATION, AS WELL AS INDICATING A NEED FOR ACQUIRING NEW DATA.

THESE POINTS WERE ALL RAISED BOTH IN WRITING AND IN ORAL DISCUSSION DURING PLANNING SESSIONS WITH THE DEPARTMENT OF ENERGY, AND ITS CONTRACTORS DURING THE PERIOD FROM FEBRUARY THROUGH SEPTEMBER OF 1981.

THESE HISTORICAL POINTS ARE BROUGHT OUT ONLY TO DEMONSTRATE THE NEED FOR A CONSULTATION AND CONCURRENCE MECHANISM, PREFERABLY THROUGH A FEDERAL/STATE NEGOTIATED AGREEMENT, EARLY IN THE PROCESS BY WHICH THE VARIOUS GEOLOGIC MEDIA ARE EXAMINED FOR THEIR POTENTIAL SUITABILITY AS GEOLOGIC REPOSITORIES. IT IS OUR SUGGESTION, HAVING BEEN SUBJECT TO THE AREA CHARACTERIZATION PHASE OF GEOLOGIC INVESTIGATION, THAT THE CONSULTATION AND CONCURRENCE PROCESSES BE FORMALLY AGREED TO BY THE FEDERAL GOVERNMENT AND ANY STATE IN WHICH STUDIES ARE TO BE PERFORMED PRIOR TO THE INITIATION OF THE AREA CHARACTERIZATION PHASE. AS A RESULT OF THE LACK OF AN AGREEMENT, THE POLITICAL SECTOR AS WELL AS THE PUBLIC OF THE STATE OF MISSISSIPPI HAVE VOICED THEIR VEHEMENT OPPOSITION TO THE DEVELOPMENT OF A REPOSITORY WITHIN ONE OF THE SALT DOMES IN ONE OF OUR SOUTHEASTERN COUNTIES.

THIS BRINGS ME TO THE SECOND MAJOR POINT WHICH I FEEL MUST BE PRESENT IN ANY PIECE OF LEGISLATION. IMPACTS THAT ARE OF BOTH A SOCIOLOGICAL AS WELL AS AN ECONOMIC NATURE HAVE ALREADY OCCURRED IN NOT ONLY THE IMPACTED COUNTY IN WHICH BOTH OF THE TWO RECOMMENDED SALT DOMES ARE LOCATED, BUT IN SUBSTANTIALLY ALL OF SOUTH MISSISSIPPI. THE UNILATERAL AND BIPARTISAN OPPOSITION TO THE DEVELOPMENT OF A GEOLOGIC REPOSITORY HAS NOT BEEN WITHOUT JUST CAUSE. THE PUBLIC AS WELL AS THE POLITICAL SEGMENTS OF OUR STATE HAVE FELT ONLY ADVERSE REACTION FROM "MAJOR FEDERAL ACTIONS", NAMELY THE USURPATION OF ABOUT 40 PERCENT OF THE IMPACTED COUNTY BY THE FEDERAL GOVERNMENT FOR THE

CAMP SHELBY MILITARY RESERVATION AND THE USE OF THE TATUM SALT DOME IN LAMAR COUNTY AS A SITE FOR NUCLEAR EXPERIMENTATION FOR DEFENSE PURPOSES IN THE 1960'S. THOSE ACTIONS OF THE FEDERAL GOVERNMENT WERE PERFORMED WITHOUT CONSULTATION WITH THE STATE, LET ALONE CONCURRENCE AND HAVE RESULTED IN A DISTRUST OF THE FEDERAL SYSTEM BY THE AFFECTED POPULACE.

IT IS OUR OPINION THAT IF THERE HAD BEEN AN ATTEMPT TO PROPERLY EDUCATE THE PUBLIC WITHOUT TRYING TO "BRAIN WASH" THEM, THE RESULTS MAY HAVE BEEN TOTALLY DIFFERENT. AS A RESULT OF THE PAST FAILURE TO PROPERLY INFORM THE PUBLIC AND APPROPRIATE STATE AGENCIES THROUGH A CONSULTATION PROCESS, THE STATE IS NOT ONLY NOT WILLING TO CONCUR IN THE DEVELOPMENT OF A REPOSITORY, BUT ALSO HAS EXPRESSED ITS TOTAL OBJECTION TO ANY FURTHER COURSES OF STUDY. THE C AND C AGREEMENT COULD SERVE AS THE VEHICLE BY WHICH BOTH REAL AND PERCEIVED IMPACTS ARE ADDRESSED AND PROVISIONS MADE FOR THEIR MITIGATION.

TECHNICAL CONSERVATISM IN THE VARIOUS STAGES OF SITE ASSESSMENT AND SCREENING IS CRITICAL. ONE MEANS BY WHICH TO ENHANCE IF NOT ENSURE TECHNICAL CONSERVATISM IS THROUGH THE ESTABLISHMENT OF SPECIFIC TECHNICAL CRITERIA AND SPECIFIC ENVIRONMENTAL STANDARDS BY THE TWO PRINCIPLE REGULATORY AGENCIES, THE NUCLEAR REGULATORY COMMISSION AND THE ENVIRONMENTAL PROTECTION AGENCY. WE ARE HIGHLY SUPPORTIVE OF THE APPROACH USED IN S. 1662 TO IDENTIFY THE APPLICABLE STANDARDS AND TECHNICAL CRITERIA AND ARE ESPECIALLY PLEASED TO NOTE THAT SITE DISQUALIFICATION FACTORS MUST BE IDENTIFIED. IT IS UNFORTUNATE THAT THESE FACTORS, STANDARDS, AND CRITERIA WERE NOT IN PLACE PRIOR TO THE INITIATION OF THE FIELD STUDIES.

TECHNICAL CONSERVATISM IS BEST SERVED BY THE COMPLETE AND THOROUGH ASSESSMENT OF ALL THE TECHNICAL, SOCIOECONOMIC, POLITICAL AND INSTITUTIONAL ISSUES IN A REASONABLY ESTABLISHED AND TECHNICALLY ACHIEVABLE TIME SCHEDULE. THE SITING OF OUR NATION'S FIRST DEEP GEOLOGIC REPOSITORY SHOULD BE CONSIDERED VASTLY DIFFERENT FROM THE SITING OF A NUCLEAR POWERED ELECTRICAL GENERATING FACILITY INASMUCH AS THE REPOSITORY WILL HAVE TO SERVE THE NEEDS OF THE NATION FOR THOUSANDS OF YEARS. THE CONCEPT OF A "LICENSABLE SITE" SHOULD BE MODIFIED TO "BEST POSSIBLE LICENSABLE SITE". THE TIME SCHEDULE ADDRESSED IN S. 1662 APPEARS TO BE TOO AMBITIOUS IN TERMS OF ADHERENCE TO THE PHILOSOPHY OF TECHNICAL CONSERVATISM. IF THE INTERMEDIATE STEPS LEADING TO ULTIMATE DISPOSAL AS SPECIFIED IN S. 1662 ARE UTILIZED, THERE IS NO NEED TO ACCELERATE THE PROGRAM AND JEOPARDIZE TECHNICAL CONSERVATISM. IF INADEQUATE STUDIES ARE PERFORMED DUE TO UNREALISTIC TIME SCHEDULES, UNWISE DECISIONS COULD POSSIBLY BE MADE THAT COULD COMPRISE THE HEALTH AND SAFETY OF THE PEOPLE AND THE QUALITY OF THE ENVIRONMENT.

THE CONCEPTS OF INCREASED ON-SITE REACTOR STORAGE, AWAY-FROM-REACTOR INTERIM STORAGE AND MONITORED, RETRIEVABLE STORAGE ARE ALL MERITORIOUS BUT NOT WITHOUT THEIR OWN INHERANT PROBLEMS. SOME MEMBERS OF THE TECHNICAL COMMUNITY VIEW THESE MEASURES AS DEFERRAL METHODS AND NOT ACCEPTABLE. OUR VIEW IS THAT THESE METHODS ARE ENHANCEMENTS TO TECHNICAL CONSERVATISM IN THE PROGRAMMATIC APPROACH TO LOCATING THE BEST POSSIBLE LICENSABLE SITE.

WE HAVE ALWAYS APPLAUDED THE PHILOSOPHY OF POLITICAL INVOLVEMENT IN A MAJOR FEDERAL DECISION. THERE ARE SEVERAL SECTIONS OF THE SUBJECT LEGISLATION THAT REQUIRES SUCH INVOLVEMENT. I WOULD LIKE TO OFFER

FOR CONSIDERATION BY THE COMMITTEE SOME COMMENTS WHICH WE, IN THE STATE OF MISSISSIPPI, FEEL WOULD STRENGTHEN THE BILL. SECTION 403 OF THE BILL CALLS FOR PRESIDENTIAL REVIEW AND A DECISION ON SITES FOR CHARACTERIZATION. FIRST, THE PRESIDENT IS GIVEN ONLY TWO MONTHS IN WHICH TO REVIEW THE DEPARTMENT OF ENERGY RECOMMENDATION WHICH IS THE CULMINATION OF AT LEAST FIVE YEARS OF WORK. IF THE PRESIDENT IS PLACED INTO SUCH A DECISION MAKING POSITION, WE FEEL THAT HE SHOULD HAVE EITHER THE ADVICE FROM AN INDEPENDENT TECHNICAL ADVISORY GROUP SUCH AS THE NOW DEFUNCT STATE PLANNING COUNCIL OR A MECHANISM OF CONGRESSIONAL CONCURRENCE IN SUCH A DECISION. WE ARE OF THE FURTHER OPINION THAT SHOULD THE PROVISION BE MAINTAINED IN THE BILL, THE DE FACTO APPROVAL THROUGH THE MECHANISM OF NO PRESIDENTIAL DECISION BE STRICKEN FROM THE LANGUAGE.

ALTHOUGH WE ARE UNCERTAIN OF THE VALUE OF THE TEST AND EVALUATION FACILITY, AS WELL AS THE COMMITTEE'S INTENT IN AUTHORIZING THE FACILITY, WE ARE PLEASED THAT CONGRESSIONAL APPROVAL OF THE CONSTRUCTION IS REQUIRED. WE ARE VERY MUCH CONCERNED, HOWEVER, THAT THE PARAGRAPH REQUIRING NRC CONCURRENCE IN SITING, DESIGN, CONSTRUCTION AND OPERATION OF A TEF WOULD COMPROMISE THE NRC'S POSITION OF INDEPENDENCE IF THE TEF PROVES TO BE A SITE FOR WHICH THE SECRETARY APPLIES FOR REPOSITORY LICENSURE.

THE ROLE TO BE PLAYED BY THE STATES IN A REPOSITORY SITING PROCESS COULD BE STRENGTHENED IN SEVERAL WAYS, SOME TO WHICH I HAVE ALREADY ALLUDED. WE FEEL THAT THE OVERALL NATIONAL WASTE MANAGEMENT PROGRAM WOULD BE ENHANCED BY CONGRESSIONAL ACTIONS TOWARD THE ESTABLISHMENT OF THE COOPERATIVE FEDERAL/STATE PARTNERSHIP EARLY IN THE PROCESS OF AREA CHARACTERIZATION. WE FEEL THAT THE PRESENT LANGUAGE ALLOWING CONSULTATION AND CONCURRENCE ONLY AFTER A DECISION ON A SITE

FOR A REPOSITORY OR MRS IS FAR TOO LATE IN THE PROCESS. THE STATE APPLAUDS THE LANGUAGE OF THE BILL AUTHORIZING OBJECTION TO A SITING DECISION. WE SUGGEST THAT A MECHANISM OF CONFLICT RESOLUTION BE REQUIRED AT AN EARLY STAGE OF AREA CHARACTERIZATION. AS I HAVE MENTIONED EARLIER IN THIS TESTIMONY, THERE HAVE BEEN SUBSTANTIVE DIFFERENCES BETWEEN THE DEPARTMENT OF ENERGY AND THE STATE AGENCIES ON THE STUDY METHODOLOGY, AS WELL AS INTERPRETATION OF THE DATA AND THE RECOMMENDATIONS ARISING THEREFROM. I BELIEVE THAT MOST OF THOSE PROBLEMS COULD HAVE BEEN AVOIDED IF A CONSULTATION AND CONCURRENCE AGREEMENT HAD BEEN IN PLACE EARLY IN THE PROCESS.

THE NEXT POINT THAT I WOULD LIKE TO ADDRESS RELATIVE TO THE LANGUAGE OF S. 1662 CONCERNS THE MECHANISM BY WHICH A STATE'S OBJECTIONS ARE REVIEWED THROUGH THE CONGRESSIONAL PROCESS. AS WRITTEN, THE BILL REQUIRES A STATE TO SOLICIT A ONE-HOUSE SUSTAINING VOTE ON ANY OBJECTION RAISED. THIS PUTS THE BURDEN OF PROOF ON THE STATE RAISING THE OBJECTION. IT IS OUR OPINION THAT A TWO-HOUSE CONGRESSIONAL OVERRIDE OF A STATE'S OBJECTION WOULD BETTER PROTECT THE STATE.

THE ABSENCE OF ANY REFERENCE TO DEFENSE-RELATED HIGH-LEVEL WASTE AND THE DISPOSITION OF SAME HAS CAUSED SOME CONCERN. WE HOPE THAT DUE TO CERTAIN OF THE DEFINITIONS, NAMELY, NUCLEAR WASTE AND HIGH-LEVEL WASTE, AND THE LACK OF ANY REFERENCE TO "CIVILIAN NUCLEAR ACTIVITIES" IN TITLE VII OF THE BILL IMPLIES THAT A REPOSITORY COULD BE USED FOR DEFENSE-RELATED WASTES. OUR INTERPRETATION OF TITLE VII IS THAT REGARDLESS OF THE WASTE ORIGIN, THE STATE(S) INVOLVED IN A REPOSITORY SITING ACTION WOULD BE GRANTED THE RIGHT OF PARTICIPATION AND THAT NRC WOULD LICENSE THE FACILITY USING THE IDENTICAL EPA

STANDARDS AND THE TECHNICAL CRITERIA REQUIRED IN TITLE IV. IN OUR LETTER OF OCTOBER 6, 1981, TO SENATOR MCCLURE WE COMMENTED ON THE LACK OF APPROPRIATE LANGUAGE TO HANDLE THE DEFENSE-RELATED WASTE. IF THE INTENT OF THE COMMITTEE IS TO UTILIZE THE APPROACH WHICH I HAVE IDENTIFIED, WE HAVE NO QUALMS WITH THE BILL'S LANGUAGE. WE DO FEEL THAT THE CONFUSION SURROUNDING THE ISSUE OF DEFENSE-RELATED WASTE WOULD BE ELIMINATED IF THE LANGUAGE OF THE BILL WOULD ADDRESS WASTES NOT ONLY FROM "CIVILIAN NUCLEAR ACTIVITIES", BUT ALSO FROM THE DEFENSE SECTOR.

AS A FINAL COMMENT, MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, WE IN MISSISSIPPI STRONGLY SUPPORT THE CONCEPT OF A PERMANENT SOLUTION TO THE WASTE MANAGEMENT ISSUES. AS THE HONORABLE SENATOR FROM IDAHO NOTED IN HIS INTRODUCTION OF THE BILL ON SEPTEMBER 24, 1981, THE PEOPLE OF HIS HOME STATE HAVE PATIENTLY AWAITED A SOLUTION TO THE NUCLEAR WASTE MANAGEMENT PROBLEM. THAT SENTIMENT IN IDAHO IS NOT UNIQUE, AS THE ENTIRE NATION HAS WAITED FOR THAT SAME SOLUTION AS WASTES FROM NUCLEAR ACTIVITIES HAVE BEEN ACCUMULATING FOR NEARLY FORTY YEARS. NATIONAL PATIENCE HAS WORN THIN AND PAST FAILURES IN TERMS OF A NATIONAL WASTE MANAGEMENT POLICY HAS RESULTED IN A SENSE OF PUBLIC DISTRUST AND MISGIVINGS OF THE SYSTEM. WE SENSE THAT THE PUBLIC'S ANGUISH OVER NUCLEAR WASTE DISPOSAL CAN BE SOOTHED, BUT ONLY THROUGH THE PASSAGE BY THE 97TH CONGRESS OF A COMPREHENSIVE, TECHNOLOGICALLY-CONSERVATIVE, ENVIRONMENTALLY SOUND, PUBLICLY ACCEPTABLE NATIONAL WASTE MANAGEMENT POLICY.

THANK YOU AGAIN FOR THE OPPORTUNITY OF PRESENTING THESE COMMENTS ON S. 1662 AND HOPEFULLY THEY CAN BE UTILIZED IN A MANNER THAT WILL BE A CONTRIBUTION TO THE WASTE MANAGEMENT EFFORT OF THIS NATION.

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Testimony of

Dr. William L. Fisher, Director
Texas Bureau of Economic Geology
and

Dr. Milton L. Holloway, Executive Director
Texas Energy and Natural Resources Advisory Council

on behalf of

Governor William P. Clements, Jr.

Before the Committee on Environment and Public Works
United States Senate

Regarding

Senate Bill 1662

November 9 , 1981

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE:

My name is William L. Fisher, Director of the Texas Bureau of Economic Geology. Milton L. Holloway, Executive Director of the Texas Energy and Natural Resources Advisory Council, co-author of the testimony, is here and is available to answer questions. Our statement concerning high-level waste disposal legislation is being presented on behalf of Governor William P. Clements, Jr.

The leadership of the State of Texas supports the development of nuclear power and a timely, technically sound and credible resolution of the high-level waste disposal problem. There are two nuclear power reactors currently under development in Texas and these facilities will eventually join the others in the nation in becoming dependent on a resolution of the waste disposal problem. Moreover, geologic formations in Texas are being investigated for generic acceptability as high-level waste repository sites.

Our specific comments on the legislation being reviewed in this Committee concern the statutory deadlines for siting of facilities, the role of the states in decision-making, and the lack of provision of authority for the Secretary of Energy to reach agreements with the states on impact mitigation or compensation.

The State of Texas has been closely involved in the studies conducted by the U. S. Department of Energy since 1977 when we agreed to assist DOE with their geotechnical investigations of salt formations in East Texas. Since then, our involvement has intensified with the Department of Energy decision to investigate additional salt formations in West Texas and our agreeing to cooperate and assist in those studies as well. We have cooperated in good faith in these investigations and, absent radical departures from the present procedures, we expect to continue that cooperation. We have developed basic geotechnical data, provided analysis and interpretation of these and other data, reviewed results and plans of the Department of Energy and their contractors, and performed administrative and information distribution functions in part supported by State funds. More recently, we have studied the decision-making process for siting decisions and have formulated views on this important aspect of the disposal problem.

While the provisions of S. 1662 are generally consistent with the positions articulated by Texas leaders on the high-level waste disposal problem, there are several alternatives, which based on our experience, would render the bill more effective and equitable.

The first point of concern is the statutory deadlines for siting of the test and evaluation facility and the first repository. The salt bed studies in Texas were started at a late date and it is unreasonable to expect an answer to remaining questions of hydrology and salt dissolution in time for the proposed June 1, 1982 decision points by the Secretary of DOE in Section 403 (b) for two candidate repository sites and January 1, 1983, in Section 407 (a) for the test and evaluation facility. We note that the U. S. Geological Survey, in testimony before this Committee, concluded that "it is unrealistic to have adequate earth-science information to

meet NRC requirements for authorizing construction of a repository by January 1, 1988". In view of the lack of completed technical studies to date, a careful review of these and other decision points is necessary. We will be happy to help prepare a more reasonable time frame. As a general matter, I would like to point out that if rigorous deadlines are to be drawn, adequate attention to outstanding technical issues along with necessary funding, resources, and public review must be developed commensurate with the deadlines.

The officials and agencies of potential host states must be allowed ample opportunity and resources for thorough review of the investigation undertaken in their state. As the earlier systematic repository development plans have been compressed, one of the major drawbacks has been the shortening of review periods offered to the states. We are already faced with periods of frantic activity when documents from the Department of Energy and their contractors are released behind schedule and deadlines for comments are not extended. Statements of the desire to receive and review timely information appear in Governor Clements' letter of July 31, 1981 to Secretary Edwards and in the resolution adopted by the Texas Energy and Natural Resources Advisory Council of September 3, 1981. Both documents are attached for your reference.

In addition to reducing opportunity for state review, the accelerated schedule demands that much of the technical conservatism of the original program be abandoned. Because the residents of the host state will be faced with the most immediate burden of a high-level waste repository, they are justified in demanding that a technically conservative design philosophy be exercised. It is obvious that clear evidence of progress in resolving the high-level waste disposal issue will relieve to some extent the current pressure on the nuclear power industry. But sacrificing opportunity for state review, thereby jeopardizing the cooperation of potential host states, and sacrificing technical conservatism in repository development risk longterm reversals. State review and public discussion are essential.

While judgments as to what constitutes adequate technical and geologic investigation vary, we conclude that the schedule as defined in S. 1662 is unrealistic. This conclusion is based on substantial technical investment in the current Texas studies and knowledge of the scope and content of the geoscience criteria specified by NRC.

We are aware of and applaud President Reagan's policy statement on nuclear power and believe that the nation should move forward expeditiously with a resolution of the high-level waste disposal problem. However, we firmly believe that the program can be expedited while allowing state input and with thorough studies of the technical question and evaluation.

The second point concerns the role of states in decision-making. Basically, the structure defined in S. 1662 is in the right direction, but needs revision. Filing valid objections by states at the time of application for a construction license is too late in the process to be meaningful. By that time, at least $40 million will have been invested in the exploratory shaft alone. (More importantly, to wait until the licensing stage to allow state objections is to needlessly risk time delays.) We do recognize that frequent consideration of frivolous objections at such a high level would be an unnecessary hindrance to timely repository development and an unjustifiable imposition on the already crowded Congressional calendars. If, however, evidence available to potential host states indicates that suggested sites are not suitable or have not been characterized as required, the opportunity should be provided for these objections to be raised and carried to the highest forum at an earlier stage, such as at the time of selection of a site for an exploratory shaft. At a minimum, Congress should direct the Secretary of Energy to specify for the Governor of a host state all major decision points leading to a repository siting decision. The attached letter from Governor Clements to Secretary Edwards and the resolution of the Texas Energy and Natural Resources Advisory Council call for the definition and provision of such schedules and technical reports. (On the issue of Congressional review of a Governor's objection, we believe as a minimum a <u>two-house</u> override of state objections is necessary as a mechanism to recognize state objections.) A state that

is asked to host a repository site "in the national interest" for this totally commercial activity must have a strong voice in the decision.

Title VII, Section 701 (b) of S. 1662 requires that the Secretary of Energy negotiate a specific "consultation and concurrence" agreement with the Governor of affected states. We recommend that the Congress instruct the Secretary of Energy, as part of the consultation and concurrence agreements, to (1) provide to the states a timely, specific, and detailed schedule for the accomplishment of requisite studies, for test drillings, for selecting the site of any exploratory shafts, and for other activities; (2) notify the Governor of pending key decisions, and (3) make available for review by the states appropriate drafts of technical reports justifying the schedule, screening criteria, and planned activities. If, as a consequence of such review, there is "no concurrence" on siting decisions, the mechanism requiring both Houses of Congress to override the state's objections must be put in place.

The third major point is impact assistance. Clearly, the host community selected for a high-level waste repository will bear a significant burden for the nation as a whole and should reasonably expect to receive some remuneration for negative impacts. Compensation for these impacts as well as provision of resources for review of investigatory plans and findings is an essential element of any truly comprehensive high-level waste legislation. Our experience indicates that state and local communities will not be willing to accept such facilities unless the perception of benefits exceeds the costs and risks of the project. Just as in the case of design and construction costs, these compensation expenses should be levied on the beneficiaries of the nuclear power produced. We believe that the best way to develop specifics of such impact assistance is to include a provision in the legislation specifically authorizing the Secretary of Energy to enter into negotiations with the states to provide impact mitigation measures. The Secretary should be encouraged to coordinate with other Federal agencies in the development of such measures.

In closing these brief remarks, let me reiterate our intention to continue to cooperate in the repository investigations now underway, provided a rigorous, deliberate and thorough technical investigation program is developed and maintained. We insist, however, that the state be assured ample and specified opportunity to fully participate in all aspects of the high-level waste repository development program. We believe that the suggestions presented will enhance the partnership between the Federal Government and potential host states and will reinforce the possibility for success in this important endeavor.

Thank you.

STATE OF TEXAS
OFFICE OF THE GOVERNOR
AUSTIN, TEXAS 78701

WILLIAM P. CLEMENTS, JR.
GOVERNOR

July 31, 1981

The Honorable James B. Edwards
Secretary of Energy
Department of Energy
2000 M Street, N. W.
Washington, D. C. 20502

Dear Mr. Secretary:

I have recently been advised of the planned, accelerated, developments in DOE's high level waste activities in the Palo Duro area of the Texas high plains through discussions with Dr. Milton Holloway, Executive Director of TENRAC, and Dr. Bill Fisher, Director of the Bureau of Economic Geology. I am aware that the Department, in keeping with the Administration's position on nuclear power development, would like to move expeditiously to resolve the high level waste disposal problem for the nation. I support this national priority.

I believe, however, that there is a need for DOE to lay out a specific and detailed timetable for the accomplishment of requisite studies, for test drilling, and for other activities under your accelerated program. I also believe it is essential that appropriate technical reports, justifying the new timetable and program activities be defined and made available for state review before DOE moves forward with specific decisions in the Palo Duro Basin. Accordingly, I request that you provide me, in writing, with a specification of your program timetable for the Palo Duro Basin as well as an identification of the requisite technical reports for state review.

In addition to more specific information on DOE plans, I request the visit of a policy officer of the Department of Energy for review of DOE plans in high level waste studies for Texas. If possible, I would like such a visit at the upcoming regular quarterly meeting of the Texas Energy and Natural Resources Advisory Council scheduled for 9:00 AM on September 3, 1981. The meeting will be held in the Senate Chamber of the State Capitol.

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I look forward to working with DOE and Administration officials on this and other important energy matters and believe a continuing dialogue on such topics is essential.

Sincerely,

Bill Clements

William P. Clements, Jr.
Governor of Texas

WPCJr:Hb

RESOLUTION

of the
Texas Energy and Natural Resources Advisory Council

Regarding

Investigation of Potential High-Level Radioactive Waste Disposal Areas

In Texas

WHEREAS, the Federal Government has identified disposal of high-level radioactive waste as a national priority and, consequently, proposes to accelerate the programs addressing this issue; and,

WHEREAS, portions of the Palo Duro Basin and Gulf Coast Salt Dome Basin in Texas are among several locations nationwide that are being studied to assess their potential for disposal of high-level radioactive waste; and,

WHEREAS, full cooperation of affected states is essential to effective and expeditious resolution of this compelling national issue; and,

WHEREAS, the State of Texas has cooperated in good faith with the Federal government in investigation of potential high-level waste repository areas in Texas and the Texas Energy and Natural Resources Advisory Council has resolved that "...in order to promote informed decision-making, the State of Texas and its citizens should continue to work with the Federal government to characterize various geologic formations in Texas";

THEREFORE, BE IT RESOLVED, as necessary conditions for the continued cooperation of the State of Texas, that the Secretary of the United States Department of Energy shall provide to the Texas Energy and Natural Resources Advisory Council a timely, specific, and detailed schedule (and any subsequent revisions) for the accomplishment of requisite studies, for test drillings, for selecting the site of any exploratory shafts, for public information programs, and for other activities; that the Governor shall be notified of pending key decisions; and that appropriate drafts of technical reports justifying the schedule, screening criteria, and planned activities shall be made available for State review before the Department of Energy moves forward with specific decisions.

Adopted this 3rd day of September 1981.

William P. Clements, Jr.
Governor of Texas
Co-Chairman

William P. Hobby
Lt. Governor of Texas
Co-Chairman

(11/06/80)

TESTIMONY BEFORE THE SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE
BY ALVIN E. RICKERS, DIRECTOR
UTAH STATE DIVISION OF ENVIRONMENTAL HEALTH
REPRESENTING SCOTT M. MATHESON, GOVERNOR OF THE STATE OF UTAH
November 9, 1981

I am presenting this information in behalf of Scott M. Matheson, Governor of the State of Utah. I am pleased to be given this opportunity to address the proposed National Nuclear Waste Policy Act of 1981. This issue is of critical importance to the citizens of Utah and any other state where a repository may be located.

Utah has no nuclear electric power generating plants. However, since the Department of Energy (DOE) has identified potential nuclear waste repository sites in bedded salt in Utah's Paradox Basin, the State has intense interest in the S.1662. Nearly a year and a half ago, the Governor established a Task Force of elected officials from the affected area in Southeastern Utah, members of the public, and selected State experts to track national actions which might lead to construction of a nuclear waste repository in Utah and to make recommendations for State action. That group has worked closely with the Department of Energy on regional, area, and specific site considerations. Selection of the nation's best possible sites for the storage of these high-level wastes must be made in a professional and open process involving all affected parties. To this end it is important that the selection process include provisions for consideration of all factors bearing on the problem. S.1662 has been well designed and has provided many of the elements for such a process. However, there are five portions of the process required by the bill which need some modification.

Time Deadlines

These dates must allow sufficient time following the enactment of the National Nuclear Waste Policy Act for the Department of Energy to acequately respond to dates which may be specified in the Act. Where a state reaction is appropriate, an additional 90 days would be necessary for a response. Most of the dates in the early part of the program can probably be met by the Department of Energy because they already have a head start in this program. The amendment changing the date to January 1, 1984 (made by the Energy and Natural Resources Committee) by which the Secretary shall transmit to the Congress a proposal for at least one test and evaluation facility is most likely too early based on the current status of research on bedded salt and salt domes. It is doubtful that the decision of which state will be a candidate host site in salt can be made before July 1, 1983. It would be difficult to complete the remaining necessary actions for a repository in this medium by January 1, 1984.

Presidental Review of Recommended Sites

The default approval resulting from the President's failure to make a decision within 60 days [Section 403(c)(1)] after receiving the Secretary's site recommendation ought to be a positive action. This is an important decision. It is recommended that the default approval provision be stricken and that the President merely be required to act within 60 days. The second provision for possible default approval at the end of six months [Section 403(c)(2)] needs to be modified similarly.

Consultation and Concurrence

Governor John Evans of Idaho aptly addressed this issue in his testimony before the Environment and Public Works Committee during the field hearings in Washington State and Governor Matheson shares his concerns about the role of the states and governors in the process.

> "...no state should be allowed to unreasonably impede the national interest. However, we continue to maintain that federalism principles dictate that the states should be equal partners in a decision as sensitive as siting a nuclear repository. To achieve that partnership, we urged the adoption of a 'consultation and concurrence' process in lieu of an absolute state veto. The consultation and concurrence provisions in Title VII very closely approximate the National Governors' Association policy in this regard."

Section 401 of this bill does provide some of the necessary components of the consultation and concurrence position endorsed by the National Governors' Association (NGA). It does not, however, provide the opportunity for states to negotiate with the Department of Energy before the President formally approves a site for further characterization study. The addition of this procedural step would considerably strengthen the partnership status of the states at a critical stage without jeopardizing the authority of the executive branch to make an overriding decision determined to be in the best national interest.

As has also been stressed in the NGA position, it is imperative that the burden for initiating and obtaining a Congressional override of states' objections be placed on the Department of Energy. Congressional review of objections to any siting decision is entirely appropriate. Placing the burden on the Department, rather than the states, will insure that DOE's site selection process will proceed in an orderly, thorough, and defensible manner. It is the DOE site selection process that must be reviewed by and defended before Congress, not the objections of a monitoring state.

Similarly, provisions for Congressional review should be incorporated into the procedural mechanism for resolving disputes involving siting of an

Away-From-Reactor (ARF) spent fuel facility. Again, the burden should be placed on the Department to defend its decision in a review by Congress.

The principles of consultation and concurrence must be incorporated into every phase of this most sensitive decision override. We insist that the states be allowed an equal partnership role. The modifications recommended to the proposed concurrence and consultation procedures provided in S.1662, will result in that partnership status.

National Environmental Policy Act

Section 404(a) of this bill proposes to alter the accepted manner for environmental review under NEPA. The review for site characterization activities would be deferred until after selection of sites for the sinking of shafts. The bill would further limit that initial review to an environmental assessment. It is absolutely essential that the NEPA process begin prior to the selection of those sites for location of an exploratory shaft because the large capitol investment involved makes it likely that a repository will be sited at the exploratory shaft site. This would require immediate initiation of the process so that meaningful public input and review can occur prior to the narrowing of the number of sites under consideration for location of exploratory shafts.

The limitation of the review on the site characterization studies to an Environmental Assessment is not appropriate. The depth and extent of the review process the DOE is already using is an ongoing process leading to the ultimate selection of a nuclear repository site and extends far beyond the parameters of an Environmental Assessment. Further, the truncating of the entire repository site selection process into a series of review stages and documents is not in the best interest of a cohesive site selection procedure. As we see it, there is one major federal action occurring. The environmental review should be incorporated into one Environmental Impact Statement. That EIS development should be completed prior to selection of an exploratory shaft.

Payments in Lieu of Taxes

The areas of growth management and mitigation of socio-economic impacts have been central themes in Governor Matheson's administration. The following issues must be given careful consideration in your legislative efforts. Payment in lieu of taxes has been the standard way of dealing with situations involving large areas of land which belong to the federal government and which detract from the tax base of the community. It is felt that payments in lieu of taxes are not an adequate solution to the problem presented by the siting of a high-level repository.

The development of a high-level nuclear waste repository would create substantial gaps between revenues and expenditures for the governmental units involved. Gaps would probably exist in both financing additional or improved capital facilities and on-going maintenance and operations

programs. Capital facilities include sewer and water plants, transmission lines, distribution and collection lines, schools, roads, municipal buildings such as fire stations, public safety complexes, and city halls, and to some extent, major equipment purchases (e.g., fire trucks). The major issue with capital facilities is that they should be in place prior to the arrival of the impact population. The funds for construction and improvement of such facilities are not available through conventional financing methods prior to the boom especially where the major cause of the impact is tax exempt and consequently does not directly affect local assessed valuations. The issuance of bonds is risky for small jurisdictions since no guarantees exist relative to repayment or that impact levels would behave as predicted. Much of the traditional "boom town" literature indicates that a two to three year lag exists between the need for expenditures and project-induced growth in revenues. Capital facilities financing problems in traditional boom towns generally occur over time and reflect primarily timing problems. The inadequacies of locally accessible revenue sources in meeting expenditure needs generated by a project this size could be a chronic problem if they are not addressed before the siting decision is made.

Before funding mechanisms can be discussed, it is appropriate to develop principles which define the local interests and thus form the basis for selecting alternatives..

The following ground rules are suggested in setting such principles:

1. No Involuntary Service Decrease - There should be no involuntary decrease in the quantity of services currently provided to local residents.

2. No Involuntary Tax Increase - There should be no involuntary increase in the taxes paid by the current local residents that would be a direct result of the development.

3. No Uncompensated Use of Infrastructure - If prior to development there exists unused community infrastructure such as extra water or sewer capacity or bonding capacity, then the same excess should exist following the growth or the jurisdication should be compensated. Just because a jurisdiction has a capability to absorb some growth does not mean this capability should be provided free to the project.

4. Maximum Local Service Control - Local control over services and facilities must be maximized.

5. Risks Borne by Developer - All risks should be absorbed by the project developer, in this case, the federal government.

   Assignment of risk to the developer means that neither the residents nor the jurisdiction should be held fiscally responsible for errors made by the developer in forecasting the magnitude of impacts.

The following options may be used to alleviate "front-end" financing deficits that may be incurred by local and/or state governments:

1. Direct Federal Impact Assistance Grants

In terms of reducing the impact of new federal installations, the Congress in the past, has authorized special legislation in two cases to permit the Department of Defense to pass funds through to local governments. In one case, the "SAFE" project in North Dakota in the 1960s, the plans for the installation were dropped and the funding mechanisms were not put into place. The second case, the Trident Community Impact Assistance Program, was funded. Under Section 608 of Public Law 92-552, between 1975 and 1981, $55.5 million of construction and construction related grants will have been channeled to Kitsap, Jefferson, and Mason Counties in the State of Washington. These grants fully covered the added state and local infrastructure costs, but did not cover operating costs associated with of the Navy's West Coast Trident Submarine Base in the Puget Sound. In addition, during fiscal years 76-78 the school districts also received a special $6.5 million allocation under P.L. 94-94.

It was forecast that the Trident Program would result in a 28,000 person population impact. As a point of comparison, the first proposed high-level nuclear waste repository indicates a peak construction workforce of 5,000 with a long term impact of approximately 1,000 workers and their families in small Southeastern Utah communities. This would likely translate into a total person population impact of 17-18,000 people.

Federal Impact Assistance Grants could be distributed to the jurisdictions involved at a magnitude determined by the fiscal impact analysis of the region, as was the case in the Kitsap County experience.

2. Revenue Bond Guarantee

For particular capital facilities, such as water and sewer systems, the federal government could guarantee the issuance of revenue bonds. Revenue bonds, unlike general obligation bonds, do not represent a claim against the
taxing power of the jurisdiction, rather, they create a claim against the revenues of the service they finance. Therefore, the ultimate risk for the bond would be borne by the federal government, not the jurisdiction. This guarantee would also make the bond more attractive to potential buyers. The bond would be paid off by the receipts of the particular project constructed.

Since in many cases facilities would have to be constructed which would be oversized at first or not efficiently utilized until forecast major population impacts occur, the debt service on the bond

could be paid in part by the federal government until the population reached a point where the receipts from the service could account for full debt service payments.

3. Purchase Bonds

A modification of the revenue bond guarantee method is the purchase by the federal government of revenue and general obligation bonds issued by the jurisdictions. Provisions would have to be made for the debt service payments in the first years of the bond. Either the federal government could pay part of the payment or delay payments until the population was large enough to offset the debt service.

4. Grant/Loan Combinations

The construction of capital facilities could be financed by a grant/loan combination. The proportions of loan dollars to grant dollars could be determined by the proportion of actual property tax revenue impact to the amount of potential property tax revenue if the project were not exempt from direct taxation. For example, within a particular jurisdiction, if the nuclear waste repository project were a private development and could be taxed directly, it might contribute $10 million to the property tax base of this example jurisdication. However, if the actual growth in the property tax base for this area is only $4 million due primarily to indirect, but taxable impacts, then a loss of $6 million would be attributable to the immunity doctrine.

Under the above example, if a school needed to be constructed at a cost of $10 million, then a grant of $6 million would be made in combination with a loan of $4 million which could be paid off by the increased tax revenue.

5. Lease/Purchase Options

The federal government would construct the necessary capital facilities to deal with the forecast impacts of the project. Once the facilities are constructed, the local jurisdictions would enter into a lease/purchase agreement with the federal government, with the local jurisdiction having a service contract so as to be totally responsible for the operation of the facility. The federal government would own the facility until future purchase is made by the local jurisdiction. The lease payments would have to be on a graduated scale with the payments determined on a per capita basis. This would compensate for the problem of oversized facilities having to be constructed to accommodate peak or long term populations. In the early years, such facilities would not be fully utilized and the constant "full cost" lease payment would be a large and unfair burden on the jurisdiction. However, if the payments were made on a basis proportional to the population, the jurisdiction would be near an

equitable proportion of the cost, increasing through time as boom population impacts occur.

This option is similar to the direct grant mechanism with the exception that the federal government receives some monies in return for the investment and the local jurisdictions pay only their fair share through time. While the federal government would own the facility, the local jurisdiction would have direct control over the operation and maintenance of the facility. The federal government still bears the risk of not accurately projecting impacts, since returns to them would be smaller if the facility is overbuilt.

The five mechanisms presented adhere to the pricing principles just stated, and in all cases the federal government is assigned the risk responsibility.

The last area for discussion in alternative financing deals with operations and maintenance.

Increased general fund revenues will follow as a result of the repository project. However, the increases may not be sufficient to cover the operating and maintenance costs of new public service facilities. Two mechanisms are suggested to reduce the potential revenue gap in terms of maintenance and operation.

These programs should be supported only until the area becomes self-sufficient.

1. Operating Subsidies

These subsidies would be made on a jurisdictional basis and would be equal to the difference between the pre-boom operational costs adjusted for inflation and the increased costs due to growth until the peak is reached. This is a price freeze to existing residents which guarantees no increases in taxes. If new services were to come on line such as a public hospital or a sewer system where no system existed previously, these subsidies would not apply.

2. Fixed Cost Guarantees

A major funding need may exist for the operation and maintenance of temporarily outsized facilities prior to peak or stable population levels being achieved. Assuming the cost of construction was borne by the federal government, the remaining costs may be separated into variable and fixed costs. Variable costs would fluctuate depending upon the use of the facility's capacity. Fixed costs would remain constant regardless of use of the facility.

Under this alternative, the federal government would bear the fixed costs of such facilities until the population had increased sufficiently to allow the jurisdiction to bear these costs by itself. The jurisdiction would be responsible for the variable costs, which should increase approximately at the same rate as the population, not accounting for inflation.

All of the funding mechanisms have advantages and disadvantages. Most likely, they should be used in combination. For enterprise operations such as sewer and water facilities, all financing mechanisms may be feasible; for schools, revenue bonds cannot be used by Utah law, therefore, either grants, grant/loan combinations or lease/purchase options would be most feasible; for municipal structures, the same holds true; and for roads, grants or grant/loan combinations would be applicable.

I appreciate the opportunity to raise these preliminary concerns. Governor Matheson intends to pursue these issues until they are fully resolved or until the State of Utah is no longer a candidate nuclear waste repository site. I hope that all of your deliberations will recognize the potential impacts on state and local governments which this process, and ultimately the siting decision, represent.

Testimony on S1662 to the Senate Committee
on Environment and Public Works
Subcommittee on Nuclear Regulation

November 9, 1981

by Philip F. Gustafson, Director
Illinois Department of Nuclear Safety

Under the most ideal circumstances the reprocessing of spent commercial nuclear fuel on a large scale is many years in the future. In the interim there will be a need for spent fuel storage capacity appreciably greater than that provided by the original design and operational capabilities of commercial nuclear power plants. One means of providing the necessary additional storage capacity is through the construction and operation of AFRs. However, before AFRs can seriously be considered all viable options for increasing the on-site storage of spent fuel at each reactor should be exhausted. These options for the increased on-site storage of spent fuel include:

1. Spent fuel pool compaction (reracking);
2. Spent fuel rod compaction (densification);
3. Transshipment of spent fuel from one reactor to another;
4. Additional spent fuel pool construction;
5. Dry spent fuel storage.

In a policy environment which permits and encourages the reprocessing of spent commercial reactor fuel the need for any AFR storage capacity will be of limited duration. This fact should be strongly kept in mind before implementing any actions leading to actual AFR siting and construction.

We in Illinois have developed the following suggestions and positions which we feel both serve the national interest and protect the interests of the citizens of this state in regard to spent fuel storage. Above all we strongly advocate commercial construction and operation of any AFR facilities which may actually be required to meet spent fuel storage needs before reprocessing essentially eliminates the spent fuel storage problem. Space for spent fuel storage in privately owned and operated AFRs could be leased to the federal government. The provision in S1662 allowing for federal ownership of the spent fuel involved is acceptable.

We recommend that insofar as possible AFRs be centrally located within the geographical regions from which spent fuel will come for storage. Such regional AFRs will reduce transportation distances and thereby the risks associated with potential radiation exposure to both the population along the routes and to the personnel involved in the transportation process itself. A total of four regional AFRs seems sufficient to satisfy national needs, and any single AFR should be limited to a 1000 MT storage capacity. In addition each AFR should have a finite operational lifetime, and its decommissioning and the ultimate fate of all spent fuel stored therein should be an integral part of the facility approval/licensing procedure. To the degree possible, AFRs should be located at the site of a reprocessing facility for spent fuel and HLW.

If the commercial sector should fail to respond effectively to the actual need for AFRs, any federal siting, development and operation of such facilities should be contingent upon substantive progress toward reprocessing of spent commercial reactor fuel and/or the development of a retrievable/permanent disposal capability for spent fuel and HLW. Furthermore we support the concept of early consultation with the host state for

an AFR, and understand that federal AFRs will be subject to the NRC licensing process which will include a full NEPA review.

Illinois is in a unique position in regard to AFRs in that the GE-Morris facility is the only AFR in the U.S. currently licensed to store spent fuel now in the facility and to accept additional spent fuel for storage. We are willing to continue to assume a fair and reasonable responsibility for meeting away from reactor spent fuel storage needs. However we will strongly resist assuming the total national burden for away from reactor spent fuel storage.

Attached for the record is a copy of a letter from Governor James R. Thompson to the Illinois House of Representatives vetoing a Senate amendment to Illinois House Bill 3614 (the Bill which created the Illinois Department of Nuclear Safety) which amendment would prohibit the transport of spent fuel into Illinois for storage at the GE-Morris facility unless a reciprocal storage agreement could be effected with the state in which the spent fuel was produced. Governor Thompson's statement on the need for AFRs and the constraints thereon is applicable today, and provides added substance and detail to my remarks.

I greatly appreciate the opportunity to appear here today, and thank you for your consideration.

STATE OF ILLINOIS

OFFICE OF THE GOVERNOR

SPRINGFIELD 62706

JAMES R. THOMPSON
Governor

September 18, 1980

To the Honorable Members of
The House of Representatives
81st General Assembly

Pursuant to Article IV, Section 9(e) of the Illinois Constitution of 1970, I hereby return House Bill 3614 entitled "An Act creating a Department of Nuclear Safety and amending certain Acts herein named," with my specific recommendation for change.

I

House Bill 3614 is the conforming legislation to my Executive Order Number 3 which created the Illinois Department of Nuclear Safety, the first cabinet level state nuclear regulatory agency in the United States. The combined efforts of my office and the General Assembly were responsive to a need for a consolidated approach to the state's public safety responsibilities in the nuclear area. The Executive Order and conforming legislation centralizes regulatory functions, insuring greater accountability to the State and the safer operation and handling of radiological facilities and materials. This legislation represents an enormous step forward for Illinois nuclear safety.

The principal goals of the Department of Nuclear Safety were to study safety questions and to ensure that the citizens of this State would be safe from nuclear power. This Department will have the expertise and the power to regulate transportation, to monitor the environment, to prepare and exercise emergency response plans and to manage our waste. In addition the General Assembly has chosen through this legislation to require that the Department of Nuclear Safety study the question of need and compare the cost and benefits of nuclear power to other available energy sources in conjunction with the Institute of Natural Resources. It is my sincere hope that the Department of Nuclear Safety will serve as a forum for the debate of the critical issues of safety and need. It will be open to all sides of the controversy and will supply a much needed expertise to explain to the general public the nature of the technical considerations of the debate. In addition, the Department will participate with the federal government both on the regulatory and legislative levels to ensure state input into the questions which so significantly affect us.

This legislation represents part of an intensive effort by my administration to ensure this goal of nuclear safety for the citizens of Illinois. Since the ominous occurrence at Three Mile Island, Pennsylvania on March 28, 1979, substantial progress has been made. Since that time, the Illinois Plan for Radiological Accidents, a comprehensive four volume nuclear emergency plan, has been prepared. In addition, the state has laid the groundwork for a nationally acclaimed remote environmental monitoring program of nuclear power plants. I have significantly enhanced, both in manpower and equipment, the state's ability to monitor the radiological materials which travel on the state's highways. I have participated on the national level with the National Governor's Association, the National Council of State Legislatures and the State Planning Council on Radioactive Waste Management to ensure that this country has a fair and safe method for managing its waste. I have contributed to the federal rulemaking process to ensure that Illinois citizens are not subject to unfair or inadequate federal regulation in this area.

The Department of Nuclear Safety, with its unique expertise and with the guidance of my administration, will continue these efforts. This state, which is more dependent on nuclear power than any other state in the nation, must be first in nuclear safety as well.

II

The legislature chose to amend this legislation to bar the interstate storage or transportation of spent nuclear fuel in this state. I veto this portion of the legislation on the ground that it represents extremely bad public policy and that it violates numerous provisions of the United States Constitution.

III

The issue regarding the storage of spent nuclear fuel is intimately connected with the nuclear power debate. That often discordant national discourse stands to affect the vary nature of American life. The State of Illinois is the number one nuclear state in the nation. Presently, seven nuclear reactors are functioning in Illinois, with eight more under construction and two planned. The City of Chicago depends for as much as 50% of its total electricity on nuclear reactors. In addition to the spent nuclear fuel facility at Morris, the state houses a uranium hexafluoride conversion facility at Metropolis and a low level radioactive waste facility at Sheffield.

IV

The nuclear controversy involves two issues: the question of safety and the question of need. The storage and transportation of spent nuclear fuel rods is a facet of the overall debate. Concluding with all major institutions that have studied the question that in the near term nuclear power is a necessity, I have refused to adopt an antinuclear stance. Nuclear power inevitably produces nuclear waste. How that waste is managed is a matter which vitally affects all the citizens of this country. Since the waste problem is a national one, not limited by state boarders, I believe that a national solution to the problem must be formulated. The states, individually and as a group, have a significant role to play in this process.

The nuclear debate also touches sensitive questions of federal/state cooperation and cooperative federalism. The federal government is charged principally with responsibility for the management of spent nuclear fuel. Under the Atomic Energy Act of 1954, the federal government, however, must not solve any of the nuclear questions in the absence of significant input from the states. A number of bodies have attempted to supply this input. I applaud their efforts. I sincerely hope that they will continue to go forward in participating in these critical matters.

V

I believe that the federal government will not be able to meet its responsibilities in the absence of sincere participation from the states. Regarding the question of away-from-reactor (AFR) facilities, I believe a number of fundamental points must be communicated to the federal government. The State of Illinois will not be the sole situs for an interim spent nuclear fuel repository for this nation. I would propose that any AFR could only be required to take spent fuel from a given region. At a minimum there should be four AFR regions in the United States. Prior to the acquisition of such facilities by the federal government state concurrence should be obtained. In addition to being limited to geographic scope the number of metric tons uranium capacity should be set forth for each AFR and additional spent fuel storage would be impossible in the absence of congressional approval.

I believe that there is a substantial question regarding the need for the interim storage of spent fuel. Accordingly I believe it should be the burden of the utilities to demonstrate that they have exhausted all alternatives to away-from-reactor storage. Such alternatives would include transshipment, reracking and on-site pool expansion. In the absence of such demonstration, storage at any away-from-reactor facility should not be permitted. In addition to this I believe that the Nuclear Regulatory Commission (NRC) must be required to license all away-from-reactor facilities. Since the NRC has no <u>explicit</u> licensing authority, the Atomic Energy Act of 1954 should be amended to contain these provisions. Transfer of any license by the NRC should be absolutely barred.

Under no circumstances should the National Environmental Policy Act be suspended for the purposes of commissioning any AFR. An Environmental Impact Statement under that act should be required for the purpose or use of a Department of Energy owned facility. Prior to the licensing of such a facility a complete plan for decommissioning and long term care must be set forth. Prior to any licensing or commissioning of an AFR, an emergency plan must be prepared. Under no circumstances should any reprocessing at an AFR be done in the absence of specific congressional authorization.

VI

In its six years of existence, the Morris facility, which would be directly affected by this amendment, has had an adequate safety record. It produces no thermal pollution and emits a miniscule amount of radiation yearly. One of the principal charges of the new Department will be to reassess the environmental impact of the facility. Preliminary assessment, however, indicates that a possible loss of coolant accident is extremely remote and the facility is highly secure from natural and manmade disasters.

VII

A much argued point regarding the Morris facility relates to the issue of the national dumping ground. I would stridently object to the State of Illinois becoming a national dumping ground for the nation. However, I believe that it is highly inaccurate to suggest that Morris, Illinois is a national dumping ground. The vast majority of national spent fuel is stored on site. Only an extremely small percentage of spent fuel is sent to Morris.

Moreover, the states in my opinion are under an obligation to share the burden of nuclear power if they are to enjoy its benefits. I would suggest that many other states now share part of the national burden. Preparing fuel for this nation's power plants produces wastes from the mining and milling of ore, uranium enrichment and fuel element manufacture. In the west, uranium mill tailings present a substantial problem. In Washington, Nevada and South Carolina, low level nuclear waste is currently being buried. Illinois low level waste goes to these sites with regularity. This state contributes to a national problem. I have repeatedly stated that it should be willing to shoulder a fair share of the burden attendant to a national solution.

VIII

The language of the amendment bars the current storage of spent nuclear fuel. I would object most vehemently to the removal of spent fuel currently housed at the Morris facility. I believe that this issue was not considered by either house when the bill was discussed. Inasmuch as there is currently no place to store these fuel rods, this is a substantial defect in the bill. Removal of such materials may present other health hazards.

IX

The bill is unconstitutional. Under the Atomic Energy Act of 1954, 42 U.S.C. § 2011-2296, the Nuclear Regulatory Commission has complete jurisdiction over the handling of special nuclear and by-product materials, 42 U.S.C. § 2021. This exclusive jurisdiction eliminates the state as a possible regulator of the possession of these materials. Recent court cases have addressed the question of the implied preemption of the states in this area. Northern Power Co. v. State of Minnesota, 477 F.2d 1143, (8th Cir. 1971), aff'd, 405 U.S. 1035 (1972); United States v. City of New York, 463 F.Supp. (S.D. N.Y. 1978); Pacific Legal Foundation v. State Energy Resources & Development Commission, 472 F.Supp. 191 (S.D. Cal. 1979).

In the most recent case, Pacific Legal Foundation, the court held that the Nuclear Regulatory Commission had exclusive power to act in an area that "relates to, touches upon and involves the regulation of radiation hazard pertaining to the construction and operation of nuclear power plants and nuclear waste disposal." 472 F.Supp. at 144. In addition, the court ruled that the legislation involved in that case was void as a consequence of standing "as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." Id. at 200. These cases stand for the proposition that under the Supremacy Clause of the United States Constitution state action is preempted if it tends to frustrate the development and use of atomic energy in the United States because such development and use is in the exclusive jurisdiction of the federal government. Since the production of nuclear waste is inextricably related to the production of nuclear energy, the state is devoid of authority to prohibit the disposal of nuclear waste since that would be construed as interferring with the use of nuclear energy.

This legislation is also void by virtue of its posing an impermissible burden on interstate commerce which is barred by the Commerce Clause of the United States Constitution. In City of Philadelphia vs. New Jersey, 437 U.S. 617 (1978) the Supreme Court struck down a New Jersey statute which barred the importation of hazardous toxic materials. Here, like in City of Philadelphia, the goal was to isolate the state from the national economy and to discriminate against goods solely because of their origin. The court stated:

> Today cities in Pennsylvania and New York find it expedient or necessary to send their waste into New Jersey for disposal and New Jersey claims the right to close its borders to such traffic. Tomorrow cities in New Jersey may find it expedient or necessary to send their waste into Pennsylvania or New York for disposal, and those states might then claim the right to close their borders. The Commerce Clause will protect New Jersey in the future just as it protects our neighbors now from efforts by one state to isolate itself from the stream of interstate commerce from a problem shared by all. Id. at 628-629.

Thus, the Supreme Court will apply a per se rule to any such protectionist legislation that discriminates against out-of-state interests. In my judgment, therefore, the bill represents an impermissible infringement on interstate commerce which I cannot in good faith sign.

X

I do not amendatorily veto Senate amendment Number 1 on the sole ground that it is unconstitutional. I believe it represents bad public policy. The State of Illinois has been extremely active in recent years in the area of nuclear safety. The State of Illinois has set up the first legislative Department in the nation which is dedicated to the regulation of the use and control of ionizing and nonionizing radiation. It has significantly increased its ability to monitor state highways for radiation hazards. It has instituted a nationally acclaimed remote radiological monitoring system for all the state nuclear reactors. It has participated on the federal level both with federal officials and other state governments in all areas of waste management. Specifically, there has been active participation with the National Governor's Association and the National Council of State Legislatures regarding low level waste management. The state has participated with the other Governor's on the State Planning Council on Radioactive Waste Management which was constituted on February 12, 1980 by President Carter to resolve some of these issues. It has prepared in the last year the Illinois Plan for Radiological Accidents, a comprehensive four volume work for state and local response to accidents at reactors. Through the Department of Nuclear Safety, all of these initiatives will go forward.

IX

I believe that in weighing the legal and policy questions which it is my constitutional duty to do, that I can not approve the Senate Amendment Number 1.

Accordingly, I make the following specific recommendations for change:

On page 24, delete lines 27 through 32; and

On page 24, delete lines 1 through 31 and insert in lieu thereof as follows:

"Article II

Section 1. This Act takes effect upon its becoming a law.".

With these changes, House Bill 3614 will have my approval.

Sincerely,

James R. Thompson
GOVERNOR

JRT:klw

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.
TECHNICAL ACTIVITIES BOARD
ENERGY COMMITTEE

PLEASE REPLY TO:

October 15, 1981

Senator Robert T. Stafford, Chairman
Committee on Environment and Public Works
4204 Dirksen Senate Office Building
Washington, DC 20510

Dear Senator Stafford:

The Institute of Electrical and Electronics Engineers (IEEE) is the world's largest engineering society, with some 213,000 members worldwide, over 165,000 of whom live and work in the United States. After nearly a year of deliberation, we would like to submit for your consideration the Institute's approved position paper on Nuclear Waste Management. This comprehensive position paper, developed by the IEEE Energy Committee, sets forth our recommendations on the technical, institutional, and political issues surrounding our nation's nuclear waste problems.

In recognition that your committee is deliberating on legislation to set forth federal policy for the disposal of nuclear waste, we would like our position paper included in your Committee's hearing record on this issue.

The IEEE stands ready to assist you in any way we can to expedite the resolution of these issues, that our nation can move forward with a sound program for reliance on nuclear power.

Sincerely,

John A. Casazza
Chairman, Energy Committee

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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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IEEE POSITION PAPER

Subject

NUCLEAR WASTE MANAGEMENT

*An IEEE Position Paper is a document issued in the name of the Institute developed to express a formal opinion by an IEEE Entity on a specific topic. — From IEEE Policy 14 (1979).

IEEE Entity Initiating the Paper: The Energy Committee

Need for Issuing: Anticipated Legislation Addressing the Issue

Intended Use: Legislative and Regulatory Hearing Records

Initial Distribution: Cognizant Committees in the Senate & House

The federal government must reaffirm a positive committment to nuclear energy and support this commitment by the establishment and implementation of of a well-defined waste management program. The federal government should assume broad oversight responsibility for all aspects of nuclear waste management through a single federal agency. The commercial nuclear power industry should retain responsibility for spent fuel and low level wastes temporarily stored on-site and at other locations on its properties. The disposal of low level wastes generated by the nuclear power industry and other civilian activities should remain under the control of the states subject to federal regulatory standards and guidelines and specific federal authorization of interstate (regional) compacts. The policy on spent nuclear reprocessing and and recycling should be seperated from the proliferation issue and resolved on the basis of economic costs, benefits, and environmental impact. Accceptance of spent fuels from foreign countries for interim storage should be minimized until a decision is made to resume reprocessing and an adequate away-from-reactor (AFR) storage and disposal facilities are available. Civilian and defense waste issues should be integrated into a single system subject to the limitations of legitimate security considerations. A national plan for nuclear waste management must include effective state and public consultation processes.

Subject
NUCLEAR WASTE MANAGEMENT
IEEE POSITION PAPER

ature of Release: DRAFT ☐ PRELIMINARY ☐ *FINAL ☒

pproval By the IEEE Entity

Signature	Name	Title	Date
	John A. Casazza	Chairman, Energy Committee	7/2/81

pproval By the Corresponding IEEE Major Board

Signature	Name	Title	Date
	Richard J. Gowen	V.P., Prof. Activities	8/19/81

Approval By the IEEE Executive Committee:

Richard Damon — President — 8/24/81

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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC
TECHNICAL ACTIVITIES BOARD
ENERGY COMMITTEE

IEEE ENERGY COMMITTEE POSITION ON NUCLEAR WASTE MANAGEMENT

Nuclear energy is a major element of our national energy policy. It is vital to the public welfare and national security. Resolution of the nuclear waste issues is necessary to the continuation and growth of this energy source. A national policy and commitment to achieve a technically, politically and socially acceptable solution is urgently needed.

The technology capability is adequate as a base for national policy. It may require extensions of existing knowledge but no scientific breakthrough. There is no evidence that remaining uncertainties are of sufficient concern to warrant relinquishing further commitment to nuclear energy. A continuing search for "best" solutions to specific problems, such as site selection, is non-productive. Further development should be mission oriented with major emphasis on large scale engineering demonstrations.

Institutional and political issues are as important and more intractable than technical problems. They must be resolved to achieve an effective national program. The continuing failure of the federal government to pass needed legislation and provide direction on the disposal of high level wastes and spent reactor fuel and to reconcile national needs with state and local interests concerning transportation and repository siting of all forms of nuclear waste has been mistakenly interpreted by much of the public as an inability to solve the waste issue.

Key recommendations for a national policy on nuclear waste management are as follows:

(1) The federal government must reaffirm a positive commitment to nuclear energy and support this commitment by the establishment and implementation of a well-defined waste management program.

(2) The federal government should assume broad responsibility for all aspects of nuclear waste management. This is necessary and desirable because of the broad national and international implications, the commonality of many aspects of defense and civilian generated waste problems, and the longevity of the hazards which may exceed the lifetime of many local government and civilian institutions.

Specific areas of responsibility may be delegated to industry and the states but with regulatory authority retained by the federal government.

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IEEE ENERGY COMMITTEE POSITION ON NUCLEAR WASTE MANAGEMENT (cont'd)

(9) Continued acceptance of spent fuel from foreign countries for interim storage, disposal or reprocessing should be minimized until a decision is made to resume reprocessing and adequate interim away-from-reactor (AFR) storage and ulimate high level waste (HLW) disposal facilities are available.

(10) Civilian and defense waste issues should be integrated into a single system subject to the limitations of legitimate security considerations. This applies particularly to technology transfer and to final disposal facilities.

(11) A national plan for nuclear waste management must include effective state and public consultation processes. Scientific and engineering organizations should participate and play a lead role in these processes. The establishment in each State of Planning Council on Radioactive Waste Management is endorsed.

The U. S. Congress must play the key role in removing the obstacles and defining the structure for a national policy and program for nuclear waste. A strong effort was made to launch a program based on the "Report to the President by the Interagency Review Group on Nuclear Waste Management", March 1979. A comprehensive legislative package equivalent to the Atomic Energy Act of 1954 is required. This legislation is urgently needed and would provide for the effective and timely resolution of the issues listed above. A proposed program for key actions is as follows:

a. Authorize a Federal Government managed system for (AFR) spent fuel storage adequate to support continued operations of domestic reactors. One or more facilities should be available by 1984 or sooner. Plans should include the acquisition of one or more of the three closed, commercially owned reprocessing sites which have expandible storage capability.

b. Authorize the demonstration of a high level waste (HLW) disposal systems including processing, transportation and mined geological burial. These should be completed and operational by 1985.

c. Authorize the planning and design of a full-scale HLW repository to be started concurrently with the demonstration repository. Construction should begin as soon as possible after acceptable operation of the demo system and at least one permanent, full size repository should be operational by the mid or late 1990's. This repository should also be suitable for disposal of transuranic (TRU) waste and spent fuel. However, spent fuel should be retained in retrievable storage until the reprocessing issue is resolved.

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APPENDIX A
SUPPORTING COMMENTS
IEEE ENERGY COMMITTEE POSITION ON NUCLEAR WASTE MANAGEMENT

Increased electrical energy production based on nuclear fission and coal combustion and coupled with effective programs for energy conservation offer the most viable means for satisfying a large portion of the nation's energy requirements for at least the next fifty years. The elimination of oil for central station power generation and substitution of electrical energy for oil where economically feasible in water and space heating and for industrial processes could save the equivalent of 70 to 80 percent of our current oil imports. Even optimistic estimates for coal production and the development of alternate energy sources indicate that the nuclear share must increase substantially to achieve a rate of growth of electric generation necessary to sustain a healthy economy and reduce dependence on imported oil. By the year 2000 twenty-five to thirty percent (300 to 360 gigawatts) of the electric power base should be nuclear-fueled (light water fission reactor) generation.

In the longer range (beyond 2010) serious and possible insolvable problems concerning the environmental impact of large scale coal combustion may preclude dependence on coal as the primary source for electric energy production. Advanced nuclear systems based on breeder technology offer the only long-term option for bulk generation of electric energy which has a high degree of technical and economic feasibility at the present time.

Nuclear Energy must be an essential element of our national energy policy. Its continuing growth is vital to national security and public welfare. A major contraint to the aggressive utilization of nuclear power is political indecisiveness rather than lack of technical and economic feasibility. Public concern over the perceived risk of radioactive waste release to the environment and weapon proliferation has had a significant influence. This perception has been stimulated and distorted by anti-nuclear activist groups, biased coverage by the news media and, to some extent, government and industry actions and policies. No single aspect of nuclear energy has generated as much public reaction as the failure of the government and industry to establish a coherent policy and workable program for the management of nuclear wastes and particularly their ultimate disposal.

The objective of nuclear waste management is the isolation of existing and future radioactive wastes from the biosphere at all phases of the nuclear fuel cycle. As a general rule this isolation should be adequate to reduce public exposure under all conditions to levels which will have negligible effects, comparable, or lower than those occurring naturally. A national policy and systems approach which will achieve a technically, politically and socially acceptable solution is urgently needed. A cooperative effort rather than an adversary relation among government, industry, the scientific and engineering community and public is essential. Failure to develop and implement a solution will continue to stymie development of nuclear fueled power and leave a dangerous legacy for future generations.

APPENDIX A
SUPPORTING COMMENTS
IEEE ENERGY COMMITTEE POSITION ON NUCLEAR WASTE MANAGEMENT (cont'd)

Historical perspective (cont'd)

been successful in limiting the radiation exposure of the public, even in areas close to fuel cycle operations, to far less than the natural background. A few accidents have occurred. Some of these, notably the Three Mile Island incident, and the leaking storage tanks at Hanford, have partially breached containment barriers; but in no known case has there been any serious environmental impact or radiation injury to the public.

Low level wastes (LLW), which contain less than 10 nano curies per gram, are radioactivity contaminated solids, liquids and gases generated in all phases of the nuclear fuel cycle and from research and medical activities. These wastes require little or no radioactive shielding but do require air and watertight containment to prevent environmental contamination. The technology for processing, packaging and disposal is adequate and if properly followed will result in insignificant environmental impact. Lack of uniform procedures for managing the many forms of LLW and complex institutional factors are, however, major areas of concern. The large and increasing quantity of LLW (now about 70 x 10^6 cu ft), the limited number of burial facilities, and the growing resistance of the states to intrastate transporting and disposal of any kind of nuclear waste, are creating a serious problem which needs to be resolved.

A large quantity, about 150 x 10^6 tons of uranium mine and mill tailings from the front end of the fuel cycle and containing low concentrations of naturally occurring radioactive materials, have accumulated at the mining and milling locations. To date the environmental impact has been insignificant primarily because of the remote location. Increasing accumulations and the potential for wind blown dispersion of radioactive gas and dust into the atmosphere and the leaching of water soluable radioactive components in the earth will require more than geographic isolation.

It is estimated that nearly two billion dollars has been spent by the federal government for nuclear waste management including R&D facility construction and operating costs. A substantial additional amount has been spent by the electric power industry for spent fuel and low level waste management.

The responsibility for government programs was assigned to a series of Federal Agencies (AEC, ERDA and DOE) through the Atomic Energy Act of 1954, the Energy Reorganization Act of 1974 and the Department of Energy Organization Act of 1977. This effort was directed to solving specific problems and resulted in the establishment of a strong technical capability without an overall

APPENDIX A
SUPPORTING COMMENTS
IEEE ENERGY COMMITTEE POSITION ON NUCLEAR WASTE MANAGEMENT (cont'd)

Technical Issues (cont'd)

7. Transportation, tests and analysis of existing cask designs have demonstrated containment integrity under all credible accident conditions but additional testing may be required, as well as evaluations of special train service and routing strategies to increase public confidence.

Political and Institutional Issues

The political and institutional issues which must be resolved to achieve an effective national program of waste management are equally important and more intractable than technical issues and problems.

The establishment of policy and the management of high level and transuranic wastes from both commercial and defense operations have been assigned by law to the Federal Government. The Federal Government is also responsible for low level wastes generated by government operations. The Department of Energy (DOE) and specifically the Office of Nuclear Waste Management has primary responsibility for non-regulatory aspects and for interfacing with regulatory programs. The functioning of this assignment is complicated by the division of power between legislative and executive branches of government in establishing basic policies and budgets and by the direct and indirect roles of other departments including Defense, Transportation, Interior and other agencies (NRC, EPA). Further complications arise from questions of state, Indian nation and local government rights concerning transportation, storage and disposal of these wastes.

The states and the source organizations have authority for the management of commercial low level wastes transported and disposed of within their own boundaries. This responsibility is subject to EPA and NRC guidelines and regulations. It is also complicated by questions concerning local land use restrictions, interstate transportation regulations and regional disposal siting on federal land involving cooperative action among several states and the federal government.

Nearly all free world foreign countries which have active programs in nuclear energy also have focused national plans and firm commitments for commercial HLW management including solidification, storage and geological disposal. Significant reprocessing of commercial spent fuel has been underway in other countries (France and the United Kingdom). In spite of the US moritorium, these countries, as well as Japan and West Germany,

APPENDIX A
SUPPORTING COMMENTS
IEEE ENERGY COMMITTEE POSITION ON NUCLEAR WASTE MANAGEMENT (cont'd)

Political and Institutional Issues (cont'd)

D. Changes in Federal Executive Branch policy. The recent administration added to the public confusion and distrust by down playing the historic role of the Federal Government as a strong supporter of nuclear energy growth to one of cautions acceptance as a short-term option.

E. The US moratorium on reprocessing and the slow-down of breeder reactor development based on largely unjustified linkage to weapon proliferation and potential increased radioactive waste problems. These actions have had a negative influence on the US public's perception of nuclear energy but have had little or no effect on reducing the world wide risks of proliferation and nuclear waste hazards.

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II

97TH CONGRESS
1ST SESSION

S. 1662

To establish a limited program for Federal storage of spent fuel from civilian nuclear powerplants, to set forth a Federal policy, initiate a program, and establish a national schedule for the disposal of nuclear waste from civilian activities, and for other purposes.

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 24 (legislative day, SEPTEMBER 9), 1981

Mr. MCCLURE (for himself, Mr. STAFFORD, Mr. DOMENICI, Mr. SIMPSON, and Mr. SYMMS) introduced the following bill; which was read twice and referred jointly to the Committee on Energy and Natural Resources and the Committee on Environment and Public Works, with the proviso that if either committee reports the bill, the other committee shall be obligated to report the bill in thirty calendar days (not including days on which the Senate is in recess for more than three days) or be discharged from further consideration thereof

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A BILL

To establish a limited program for Federal storage of spent fuel from civilian nuclear powerplants, to set forth a Federal policy, initiate a program, and establish a national schedule for the disposal of nuclear waste from civilian activities, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That this Act may be cited as the "National Nuclear Waste Policy Act of 1981".

TITLE I—FINDINGS AND PURPOSE

FINDINGS

SEC. 101. The Congress finds and declares that—

(a) a reliable system adequate to provide sufficient electrical energy to meet the Nation's current and anticipated needs is an essential part of a comprehensive national energy policy and is vital to national security and public welfare;

(b) an adequate electrical system requires a diversified base of primary energy sources in order to avoid excessive reliance upon any single alternative energy source;

(c) a diverse base of primary energy sources can be achieved only if each available source competes on an equal footing in decisions on the siting and construction of facilities for generating commercial electric power;

(d) nuclear energy can—

(1) make a significant contribution to national supplies of electricity;

(2) offer site-specific advantages in environmental impact, cost, and fuel availability over other primary sources of energy; and

(3) help reduce United States dependence on insecure sources of foreign oil;

(e) lack of an effective Federal policy for the interim storage of spent fuel and disposal of nuclear waste from civilian nuclear activities unreasonably burdens the choice of nuclear energy as an alternative primary source in decisions on siting and construction and operation of powerplants and unduly constrains efforts to establish a diverse base of primary energy sources;

(f) the persons owning and operating civilian nuclear powerplants have the primary responsibility for providing for the interim storage of spent fuel from civilian nuclear powerplants, but the Federal Government has the responsibility to provide sufficient capacity for interim storage of spent fuel for those civilian nuclear powerplants that cannot reasonably provide adequate onsite storage capacity when needed to assure the continued, orderly operation of the powerplant;

(g) the Federal Government has the responsibility for the disposal of high-level radioactive waste from civilian nuclear activities in order to protect the public health and the safety, the environment, and the common defense and security;

(h) the costs associated with the storage and disposal of nuclear waste from civilian activities should, to the greatest extent possible, be borne by the direct beneficiaries of such activities and should be considered in the selection or rejection of nuclear energy over alternative primary energy sources;

(i) the technology exists and is under development which would provide reasonable assurance that spent fuel and high-level radioactive waste can be safely disposed of and that disposal facilities for spent fuel and high-level wastes can be available when needed;

(j) nuclear wastes generated in the national defense program have been accumulating for more than thirty years, and spent nuclear fuel and nuclear wastes from the commercial industry are increasing rapidly;

(k) nuclear waste has become a major issue of public concern, and stringent precautions must be taken to ensure that nuclear wastes do not adversely affect the public health and safety of this or future generations;

(l) the siting, development, and loading of nuclear waste repositories are responsibilities of the Federal Government;

(m) confidence in the ability of the Federal Government to manage a program providing for the safe

and permanent disposal of nuclear wastes must be substantially increased if nuclear power is to contribute significantly to meeting the energy needs of the United States in the future;

(n) Federal nuclear waste disposal programs have been ineffective due to—

(A) inadequate coordination among the various Federal agencies and departments which have responsibilities relating to nuclear waste management;

(B) the lack of a policymaking process which integrates the views of all Federal agencies and departments into a comprehensive Government-wide policy; and

(o) the Secretary must increase his efforts to consult and cooperate with States and localities concerning Federal repository siting, development, and loading activities;

(p) a successful nuclear waste management strategy requires the full participation of State and local officials, Indian representatives and the public in a step-by-step, technologically sound program, to promote public confidence in the safe disposal of nuclear waste, consistent with the responsibility of the Federal Gov-

ernment to determine public health and safety matters related to such program; and

(q) the first step in a successful nuclear waste management strategy is the establishment of a national schedule for the development of programs and facilities for the storage and disposal of high-level radioactive waste and spent fuel in a timely manner.

PURPOSE

SEC. 102. The purpose of this Act is to—

(a) assume the Federal responsibility for the acquisition and interim storage of spent fuel from civilian nuclear powerplants where needed to assure the orderly operation of such plants, and for the disposal of high-level radioactive waste from civilian nuclear activities;

(b) establish a definite Federal policy for the disposal of high-level radioactive waste from civilian nuclear activities and a national schedule for developing the facilities and programs needed to carry out that policy in a timely manner;

(c) authorize the Secretary to—

(1) acquire or construct at least one facility for the interim storage of spent fuel from civilian nuclear powerplants not to exceed a specified total storage capacity; and

(2) establish systems for the long-term storage and disposal of high-level radioactive waste generated by civilian nuclear activities, and to develop, construct and put in operation the facilities comprising these systems;

(d) establish a system for financing the construction, operation, and maintenance of Federal storage and disposal facilities for high-level radioactive waste and spent fuel from civilian nuclear activities;

(e) improve coordination of Federal nuclear waste management programs; and

(f) provide for improved consultation and cooperation between the Department of Energy and States and localities concerning Federal storage and repository siting and development activities, consistent with the responsibility of the Federal Government to determine public health and safety matters related to such activities.

TITLE II—DEFINITIONS

SEC. 201. As used in this Act the term—

(1) "civilian nuclear powerplant" means a utilization or production facility required to be licensed under section 103 or 104 b. of the Atomic Energy Act of 1954, as amended;

(2) "Commission" means the Nuclear Regulatory Commission;

(3) "disposal" means the long-term isolation of radioactive waste as spent fuel in a repository;

(4) "environmental impact statement" means any document prepared pursuant to or in compliance with the requirements of section 102(2)(C) of the National Environmental Policy Act of 1969 (83 Stat. 852);

(5) "Secretary" means the Secretary of the Department of Energy;

(6) "spent fuel" means nuclear fuel that has been irradiated in and recovered from a civilian nuclear powerplant or from other civilian nuclear activities;

(7) "Department" means the Department of Energy;

(8) "Governor" means the Governor of a State, or successors to the Governor, during their respective terms of office, or their designees;

(9) "nuclear waste" means high-level waste, transuranic contaminated waste, and low-level waste;

(10) "high-level waste" means the highly radioactive wastes resulting from the reprocessing of spent nuclear fuel, and includes both the liquid waste which is produced directly in reprocessing and any solid material into which such liquid waste is made;

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(11) "repository" means a facility for the permanent, deep geologic disposal of high-level waste, transuranic contaminated waste, or spent nuclear fuel, whether or not such facility is designed to permit the subsequent recovery of such material, except for facilities to be used exclusively for research and development purposes containing an insignificant amount of such material;

(12) "storage" means retention of nuclear waste or spent nuclear fuel with the intent to recover such material for subsequent use, processing, or disposal;

(13) "affected State" means the State in which a long-term storage or disposal facility for high-level radioactive waste or spent fuel is proposed to be located;

(14) "Indian tribe" means an Indian tribe, as defined in the Indian Self-Determination and Education Assistance Act (Public Law 93–638);

(15) "affected Indian tribe" means any tribe in an affected State whose rights reserved through statutes, treaties, Executive orders, judicial decision, or other applicable law could reasonably be expected to be adversely affected by the development, construction or operation of a facility for the long-term storage or disposal of radioactive waste;

(16) "nuclear waste and spent nuclear fuel management" means the transport, storage, and disposal of nuclear waste and spent nuclear fuel; and

(17) "site characterization" means the program of exploration and research, both in the laboratory and in the field, undertaken to establish the geologic conditions and the ranges of those parameters of a particular site relevant to the procedures under this part. Site characterization includes borings, surface excavations, excavation of exploratory shafts, limited subsurface lateral excavations and borings, and in situ testing needed to determine the suitability of the site for a geologic repository, but does not include preliminary borings and geophysical testing needed to decide whether site characterization should be undertaken.

TITLE III—INTERIM STORAGE OF SPENT FUEL FROM CIVILIAN NUCLEAR POWERPLANTS

SEC. 301. (a) It is the policy of the Federal Government that—

(1) the persons owning and operating civilian nuclear powerplants have the primary responsibility for providing interim storage of spent fuel from such powerplants, by maximizing, to the extent practical, the effective use of existing storage facilities at the site of each civilian nuclear powerplant, by adding new

onsite storage capacity in a timely manner where practical, and by the use of privately owned and operated offsite storage facilities where practical;

(2) the Federal Government has the responsibility to encourage and expedite the effective use of existing storage facilities and the addition of needed new storage capacity at the site of each civilian nuclear powerplant; and

(3) the Federal Government has the responsibility to provide, as soon as possible, sufficient capacity for interim storage of spent fuel for those civilian nuclear powerplants that cannot reasonably provide adequate storage capacity at the site of the powerplant when needed to assure the continued, orderly operation of the powerplant.

(b) The policy under subsection (a) shall provide for—

(1) the utilization of available spent fuel pools at the site of each civilian nuclear powerplant to the extent practical and the addition of new spent fuel storage capacity where practical, either at the site of the powerplant or at a privately owned and operated offsite storage facility; and

(2) the establishment of a federally owned and operated system for the interim storage of spent fuel at one or more away-from-reactor facilities with a limited

capacity sufficient to prevent disruptions in the orderly operation of nuclear powerplants that cannot reasonably provide adequate spent fuel storage capacity at the powerplant site when needed.

SEC. 302. (a) The Secretary, consistent with such criteria as he prescribes under the policy set forth in section 301 and as are required under this section, shall offer to enter into, and may enter into, contracts with persons owning and operating civilian nuclear powerplants that the Secretary determines cannot reasonably provide adequate spent fuel storage capacity at the powerplant site to ensure the continued orderly operation of the powerplant, through the maintenance of a full core reserve storage capability, either by utilizing available spent fuel pools to the extent practical or by adding new spent fuel storage capacity at the site of the powerplant: *Provided, however,* That the Secretary shall not enter into contracts for spent fuel in amounts in excess of the available storage capacity specified in section 305(a). Those contracts shall provide that the Federal Government will (1) take title to such amounts of spent fuel from the powerplants as the Secretary determines cannot be stored onsite, (2) transport the spent fuel to a federally owned and operated interim away-from-reactor storage facility, and (3) store such fuel in the facility pending further processing, storage, or disposal.

(b) Not later than ninety days after the date of enactment of this Act, the Secretary shall propose, by rule, procedures, and criteria for making the determination required by subsection (a) that a nuclear powerplant cannot reasonably provide adequate spent fuel storage capacity at the powerplant site when needed to ensure the continued orderly operation of the powerplant.

(c) Nothing in this Act authorizes the Secretary to take title to spent fuel, transport spent fuel, store or dispose of spent fuel or the waste products associated with spent fuel from a nuclear powerplant not located within the United States.

SEC. 303. A contract entered into under section 302 shall provide—

(a) for a one-time payment at the time the Federal Government acquires the spent fuel of a charge per unit of spent fuel, as such unit is defined by the Secretary, which charge is determined by the Secretary to be adequate to cover—

(1) the cost of transportation of such spent fuel; and

(2) the proportion of the costs of the construction and operation, maintenance and decommissioning of Federal interim away-from-reactor

storage facilities, which proportion is associated with such spent fuel;

(b) for the retention by the owner of such spent fuel of a nontransferable right to the value of the remaining fuel resource less the costs of recovery, as determined at the time of recovery. The right ends when the Federal Government—

(1) takes action resulting in the recovery of the remaining fuel resource and gives to the owner of the right an amount of money equal to the value of the recovered fuel less the costs of recovery; or

(2) disposes of such fuel in a repository;

(c) that title to the spent fuel together with all rights to such fuel, except as otherwise provided in this Act, passes to the Secretary at the site of the powerplant at the time the Secretary takes possession of the spent fuel; and

(d) that the contract becomes effective when the interim away-from-reactor storage facility is available as determined by the Secretary by notice in the Federal Register.

SEC. 304. (a) The Secretary shall provide notice of intent to enter into such contracts by publishing notice in the Federal Register not later than one hundred and eighty days

after the date of enactment of this Act. Such notice shall contain such information as the Secretary considers appropriate concerning proposed terms and conditions of such contracts.

(b) The Secretary shall establish the one-time payment charge per unit of spent fuel required by section 303(a) on an annual basis, based on calculation of the costs listed in section 303(a), and shall publish such annual one-time payment charge and the calculation thereof in the Federal Register. Each such annual one-time payment charge shall become effective thirty days after publication and shall remain effective for a period thereafter of twelve months as the charge for the costs listed in section 303(a) for any spent fuel, title to which is transferred to the Federal Government during that twelve-month period.

SEC. 305. (a) The Secretary shall construct, acquire, or lease one or more away-from-reactor facilities for the interim storage of spent fuel from civilian nuclear powerplants with a total storage capacity at all such facilities of not more than two thousand eight hundred metric tons of uranium. The facilities shall—

(1) be made available in a timely manner to accommodate all spent fuel for which commitments have been made pursuant to section 302 of this Act; and

(2) be subject to a license under the provisions of section 202(3) of the Energy Reorganization Act of 1974 (88 Stat. 1233), as amended: *Provided,* That in determining whether to issue a license for such a facility, the Commission shall not consider the need for the facility. The Secretary shall submit to the Commission a license to construct, acquire or lease, and operate such a facility not later than January 1, 1983.

(b) The Secretary, in providing for the transportation of spent fuel under this Act, shall utilize by contract private industry to the fullest extent possible in each aspect of such transportation. The Secretary shall use direct Federal services for such transportation only upon a determination of the Secretary of Transportation, in consultation with the Secretary, that private industry is unable or unwilling to provide such transportation services at reasonable cost. The authority of the Secretary to enter into contracts under this section shall be limited to the extent or in such amounts as are provided in appropriations Acts.

(c) The Secretary, on a continuing basis, shall analyze and make projections of the availability when needed of spent fuel transportation casks required to support transportation requirements pursuant to subsection (b). The Secretary and the Commission are authorized and directed to take such actions as the Secretary and the Commission, respectively,

deem necessary and appropriate to ensure the timely availability when needed of such spent fuel transportation casks.

SEC. 306. When an interim away-from-reactor storage facility is available, the Secretary shall take possession of and transport to a designated storage facility any spent fuel covered by a contract made under section 302 of this Act. The Secretary shall take this action within thirty days after the date on which the owner of such spent fuel provides notice in writing to the Secretary that such spent fuel is available.

SEC. 307. Funds made available to the Secretary for the purpose of—

(a) acquiring plant and capital equipment or land; or

(b) for planning, construction, or modification of facilities,

to make available facilities for the interim storage of spent fuel from civilian nuclear powerplants away from the reactor under any law making appropriations of funds or authorizations for appropriations of funds for the fiscal year ending September 30, 1979, or the fiscal year ending Septembr 30, 1980, including funds authorized and appropriated for Project 79–1–p (away-from-reactor spent nuclear fuel storage capacity) in legislation authorizing appropriations for the Department of Energy for the fiscal year ending September 30,

1980, shall be available to carry out the purposes of section 305.

SEC. 308. (a) In carrying out the provisions of sections 301 through 307 with regard to any facility for the interim storage of spent fuel from civilian nuclear powerplants which the Secretary is authorized by section 305(a) to construct, acquire or lease, the Secretary shall—

(1) as soon as practicable, but not later than ninety days after enactment of this section, notify in writing the Governor and the legislature of any State in which is located a potentially acceptable site for such a facility or an existing facility potentially suitable for interim storage of spent fuel of his intention to investigate that site or facility;

(2) during the course of investigation of such site or facility, keep the Governor and the legislature currently informed of the progress of work and results of the investigation;

(3) at the time of selection by the Secretary of any site or existing facility, but prior to undertaking any site-specific work or alterations, promptly notify the Governor and the legislature in writing of such selection;

(4) throughout the course of any subsequent work on that site or existing facility, furnish the Governor

all relevant information on a current basis and provide him with the opportunity for review and comment from time to time.

(b) If within a reasonable time after the Governor has received notice of selection required by subsection (a)(3), the Governor notifies the Secretary in writing of his objections to the facility, the Secretary shall suspend further work on such facility and promptly transmit the Governor's objections together with the Secretary's comments and recommendations to the President.

(c) Unless within ninety days after receipt of the Secretary's notification under subsection (b) the President determines that such facility is essential to the national interest, the Secretary shall terminate activities specific to the facility. Such determination shall not be subject to judicial or administrative review.

(d) During the regulation and monitoring of the facility, the Governor or his designee shall have the right to be currently informed of all relevant information, and shall have the right to review and comment on such matters from time to time.

SEC. 309. Section 202(3) of the Energy Reorganization Act of 1974 is amended to read:

"(3) Facilities used primarily for the receipt and storage or disposal of high-level radioactive waste or

spent fuel resulting from activities licensed under such Act or spent fuel from foreign reactors transferred under a subsequent arrangement authorized under such Act.".

SEC. 310. Transportation of spent fuel under section 303(a) shall be subject to licensing and regulation by the Commission as provided for transportation of commercial spent fuel under existing law.

SEC. 311. (a) The Secretary, the Commission, and other appropriate Federal officials shall take such actions as they consider necessary to encourage and expedite the effective use of existing storage facilities and the addition of needed new storage capacity at the site of each civilian nuclear powerplant consistent with—

(1) the protection of the public health, safety, and the environment;

(2) economic considerations;

(3) continued operation of the powerplant;

(4) the sensibilities of the population surrounding such powerplant; and

(5) otherwise applicable law.

(b) The Secretary, in consultation with the Commission, shall establish a cooperative program to assist and encourage the private development of alternate technologies for the storage of spent fuel at the sites of civilian nuclear power-

plants, with the objective of developing one or more alternate technologies that can be licensed by the Commission on a generic basis for use at the sites of all civilian nuclear powerplants without the need for additional site-specific approvals by the Commission to the maximum extent practicable. For the purposes of this subsection, "alternate technologies" shall include, but are not limited to, spent fuel storage casks.

SEC. 312. (a) Any person filing an application with the Commission after the date of enactment of this Act for a license, or for an amendment to an existing license, to expand the spent fuel storage capacity at the site of a civilian nuclear powerplant, through the use of high-density fuel storage racks, fuel rod compaction, the transshipment of spent fuel to another powerplant within a utility system, the construction of additional spent fuel pool capacity, or by other means, may submit a petition to the Commission for issuance of the license or license amendment on an interim basis prior to the conduct or completion of any required hearing upon such application.

(b) The Commission shall grant the petition submitted under subsection (a) and issue the license or license amendment on an interim basis if the Commission or its designee determines that—

(1) in all respects other than the conduct or completion of any required hearing, the requirements of law are met; and

(2) in accordance with such requirements, there is reasonable assurance that the activities authorized by the license or license amendment during the interim period, in accordance with the terms and conditions of such license or license amendment, will provide adequate protection to the public health and safety and the environment during the interim period.

SEC. 313. (a) In any Commission hearing pursuant to section 189 of the Atomic Energy Act of 1954, as amended, on an application for a license, or for an amendment to an existing license, filed after the date of enactment of this Act, to expand the spent fuel storage capacity at the site of a civilian nuclear powerplant, through the use of high-density fuel storage racks, fuel rod compaction, the transshipment of spent fuel to another such powerplant within a utility system, the construction of additional spent fuel pool capacity or dry storage capacity, or by other means, the Commission shall first provide the parties to the proceeding an opportunity to submit for the record such written data, views, or arguments as the hearing board may specify. At the request of any party, the hearing board shall provide an opportunity for oral argument with respect to any matter identified in the written

submissions which the hearing board determines to be in controversy among the parties. The hearing shall be preceded by such discovery procedures as the rules of the Commission shall provide, and as ordered by the hearing board. The hearing board shall require each moving party, including the Commission staff, to submit in written form, at the time the proceeding is initiated, all the facts and arguments upon which that party proposes to rely that are known at such time to that party.

(b)(1) At the conclusion of any hearing under subsection (a) of this section, the hearing board shall designate any disputed question of fact, together with any remaining questions of law, for resolution in an adjudicatory hearing only if it determines that—

(A) there is a genuine and substantial dispute of fact involving factual assumptions or methodology upon which expert opinion is based, or concerning the credibility or competence of an expert witness significantly relied upon by one or more of the parties to the proceeding, which can only be resolved with sufficient accuracy by the introduction of reliable and specifically identified evidence in an adjudicatory hearing; and

(B) the decision of the Commission is likely to depend in whole or in part on the resolution of such dispute.

(2) In making a determination under this subsection, the hearing board shall designate in writing the specific facts that are in genuine and substantial dispute, the reason why the decision of the agency is likely to depend on the resolution of such facts, and the reason why an adjudicatory hearing is likely to resolve the dispute.

(c) No court shall hold unlawful or set aside a decision of the Commission in any proceeding described in subsection (a) because of a failure by it to use a particular procedure pursuant to this section unless—

(A) an objection to the procedure used was presented to the hearing board in a timely fashion or there are extraordinary circumstances that excuse the failure to present a timely objection, and

(B) the court finds that such failure has precluded a fair consideration and informed resolution of a central issue of the proceeding taken as a whole.

SEC. 314. In any proceeding on an application for a license, or for an amendment to an existing license, filed after the date of enactment of this Act, to expand the spent fuel storage capacity at the site of a civilian nuclear powerplant, through the use of high-density fuel storage racks, fuel rod compaction, the transshipment of spent fuel to another such powerplant within a utility system, the construction of additional spent fuel pool capacity or dry storage capacity or by

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other means, the Commission shall not consider as alternatives the storage of spent fuel in away-from-reactor storage facilities.

TITLE IV—DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE AND SPENT FUEL FROM CIVILIAN NUCLEAR ACTIVITIES

SEC. 401. (a) It is the policy of the Federal Government that—

(1) the Federal Government has the responsibility to provide for the permanent disposal of solidified high-level radioactive waste and spent fuel from civilian nuclear activities;

(2) spent fuel, unless otherwise processed, and high-level radioactive waste from civilian nuclear activities must be permanently disposed of in a federally owned and operated repository;

(3) the Federal Government has the responsibility to assure that repositories capable of safely disposing of solidified high-level radioactive waste and spent fuel from civilian nuclear activities are available with sufficient capacity when needed; and

(4) the Federal Government has the responsibility to demonstrate as soon as possible that high-level waste and spent fuel from civilian nuclear activities can be disposed of in a manner that provides adequate pro-

tection to the public health, safety, and the environment.

(b) The policy under subsection (a) shall provide for—

(1) the establishment of a federally owned and operated program for the siting, development, construction, and operation of repositories capable of safely disposing of solidified high-level radioactive waste and spent fuel from civilian nuclear activities, which repositories are to be licensed by the Commission;

(2) a national schedule for accomplishing the regulatory and programmatic actions needed to achieve the objective of obtaining by January 1, 1988, a Commission authorization to construct the first full-scale, operational repository capable of safely disposing of solidified high-level radioactive waste and spent fuel from civilian nuclear activities, and achievement of operational status for the repository as soon thereafter as possible; and

(3) the development, construction, and operation of at least one test and evaluation facility for the purpose of developing the packaging, handling, and emplacement technology for solidified high-level radioactive waste and spent fuel needed to further the demonstration of disposal of such waste and spent fuel, with

the objective of achieving operational status of one such facility by January 1, 1988.

DEVELOPMENT OF EPA STANDARDS AND NRC TECHNICAL CRITERIA

SEC. 402. (a) EPA STANDARDS.—Not later than June 1, 1982, the Administrator of the Environmental Protection Agency, pursuant to authority under existing law, shall, by rule, promulgate generally applicable standards for offsite releases of radioactivity from repositories capable of disposing of solidified high-level radioactive waste and spent fuel from civilian nuclear activities.

(b) NRC TECHNICAL CRITERIA.—Not later than January 1, 1983, the Commission, pursuant to authority under existing law, shall, by rule, promulgate technical criteria for review of an application—

(1) for authority to construct a repository capable of disposing of solidified high-level radioactive waste and spent fuel from civilian nuclear activities,

(2) for a license to emplace such waste and spent fuel in the repository, or

(3) for a license amendment to decommission the repository.

Such criteria shall provide for the use of multiple barriers in the design of the repository and shall limit the retrievability of the waste and spent fuel emplaced in the repository unless

such action is needed to protect the public health, safety, and the environment.

IDENTIFICATION OF SITES FOR REPOSITORIES

SEC. 403. (a) GUIDELINES FOR REPOSITORY SITE RECOMMENDATION.—Not later than January 1, 1982, the Secretary, in consultation with the Commission, the Environmental Protection Agency, and the United States Geological Survey, shall issue general guidelines for the recommendation of sites for repositories capable of safely disposing of solidified high-level radioactive waste and spent fuel from civilian nuclear activities. Under such guidelines, the Secretary shall specify factors that would disqualify a site from development as a repository, including factors pertaining to the location of valuable natural resources, proximity to population, hydrogeophysics, seismic activity, and nuclear defense activities. The guidelines shall require the Secretary to consider the various geologic media in which sites for repositories may be located and, to the extent practicable considering the schedule of actions contained in this title, to recommend sites in different geologic media. The Secretary shall use the guidelines established under this subsection in considering sites to be recommended under subsection (b).

(b) SITE RECOMMENDATIONS BY THE SECRETARY.—

(1) Not later than June 1, 1982, the Secretary shall identify and recommend to the President at least

two sites that the Secretary determines are suitable for site characterization. Not later than January 1, 1983, the Secretary shall identify and recommend to the President at least one additional site which the Secretary determines is suitable for such purpose. Each recommendation of a site shall include a detailed statement of the basis for the recommendation. If the Secretary recommends a site to the President, the Secretary shall notify the Governor of the State in which the site is located and the Tribal Council of any affected Indian tribe of the Secretary's recommendation and the basis for such recommendation.

(2) Before recommending to the President any site for characterization, the Secretary shall notify the Governor of the State in which the site is located and the Tribal Council of any affected Indian tribe of the proposed recommendation, and the Secretary shall hold public meetings in the vicinity of the site to inform the residents of the area in which the site is located of the proposed recommendation and to receive their comments.

(c) PRESIDENTIAL REVIEW OF RECOMMENDED SITES.—

(1) The President shall review each site recommendation of the Secretary under subsection (b).

Within sixty days after the submission of a recommendation for a site, the President in his discretion shall either approve or disapprove the site, and transmit his decision to the Secretary, to the Governor of the State in which the site is located, and to the Tribal Council of any affected Indian tribe. If the President fails to approve or disapprove the site in accordance with this paragraph during such sixty-day period, or within such period fails to invoke his authority under paragraph (2) to delay the determination, the site shall be considered to be approved.

(2) The President may delay for not more than six months his decision under paragraph (1) to approve or disapprove a site upon determining that the information provided with the recommendation is not sufficient to permit a decision within the sixty-day period referred to in paragraph (1). The President may invoke his authority under this paragraph by submitting written notice to the Congress, within such period, of his intent to utilize the authority provided under this paragraph. If the President invokes this authority under this paragraph but fails to approve or disapprove the site at the end of such six-month period, the site shall be considered to be approved.

(d) Any activity of the President or the Secretary under this section shall be considered a preliminary decisionmaking activity and shall not be subject to the National Environmental Policy Act of 1969 (83 Stat. 852).

SITE CHARACTERIZATION

SEC. 404. (a) The Secretary shall carry out in accordance with this section appropriate site characterization activities at each site approved under section 403.

(b)(1) Before proceeding to sink shafts at any site, the Secretary shall submit for such site to the Commission, to the Governor of the State in which the site is located, and to the Tribal Council of any affected Indian tribe, for their review and comment—

(A) an environmental assessment of the nonradiological impacts of the site characterization activities planned for such site, and a discussion of alternative activities for purposes of site characterization which may be undertaken to avoid such impacts;

(B) a general plan for site characterization activities to be conducted at such site, which plan shall include—

(i) a description of the site;

(ii) a description of the site characterization activities, including the extent of planned excavations, plans for any onsite testing of radioactive

material or nonradioactive material, investigation activities that may affect the ability of the site to isolate radioactive waste and spent fuel, and provisions to control likely adverse, safety-related impacts from site characterization activities;

(iii) plans for decontaminating and decommissioning the site if it is determined unsuitable for application for licensing as a repository; and

(iv) any other information required by the Commission; and

(C) proposals describing the possible form of packaging for the waste material and spent fuel that would be emplaced in the repository.

(2) During the conduct of site characterization activities at a site, the Secretary shall report to the Commission, to the Governor of the State in which the site is located, and to the Tribal Council of any affected Indian tribe, on the nature and extent of such activities and the information developed from such activities.

(c) The Secretary shall conduct such tests as the Secretary deems necessary to provide the necessary data for an application for a construction authorization by the Commission for a repository at the site and for compliance with the National Environmental Policy Act of 1969 (83 Stat. 852). The Secretary shall report to the Commission, to the Gover-

nor of the State in which the site is located, and to the Tribal Council of any affected Indian tribe, on the tests conducted at a site pursuant to this subsection and on the information developed from such tests.

(d)(1) In conducting site characterization activities or tests pursuant to subsection (c)—

(A) the Secretary may not use radioactive materials at a site unless the Commission concurs that such use is necessary to provide data for the submission of an application for a construction authorization for a repository at the site;

(B) if radioactive materials are placed in a site, the Secretary shall place the smallest quantity necessary to determine the suitability of the site for a repository, but in no event more than the curie equivalent of ten metric tons of spent fuel; and

(C) any radioactive material used or placed on a site shall be fully retrievable: *Provided, however,* That the restrictions of subparagraphs (1)(A) and (1)(B) shall not apply to the test and evaluation facility authorized under section 407.

(2) If characterization activities are terminated at a site for any reason, the Secretary shall remove any nuclear waste, spent fuel, or other radioactive materials at or in the site as promptly as practicable.

SITE APPROVAL AND CONSTRUCTION AUTHORIZATIONS

SEC. 405. (a) Prior to submitting a recommendation to the President for approval of a site, the Secretary shall hold public meetings in the vicinity of the site to inform the residents of the area in which the site is located of the determination of the Secretary and to receive their comments. Upon completion of the meetings, the Secretary may submit to the President a recommendation that the President approve the site for the development of a repository.

(b) Not later than January 1, 1985, the President shall select at least one site that the President considers qualified for application for license as a repository.

(c) The Secretary shall submit to the Commission an application for authorization to construct a repository at a site selected by the President within ninety days after the date on which the President selects a site under subsection (b). The Secretary shall provide a copy of such license application to the Governor of the State in which the site is located and to the Tribal Council of any affected Indian tribe.

(d) Not later than eighteen months after the date on which an application is submitted under subsection (c), the Commission shall submit to the Congress a report describing the proceedings on the application undertaken through such date, including a description of—

(1) major unresolved safety issues, and the Secretary's explanation of design and operation plans for resolving such issues;

(2) matters of contention regarding the application; and

(3) any Commission actions regarding the granting or denial of the application.

(e) The Commission shall consider a license application for the construction of a repository in accordance with the laws applicable to such applications, except that the Commission shall issue a final decision approving or disapproving the first such application not later than January 1, 1988.

(f) The Commission shall consider an application for authorization to construct a repository in accordance with the laws applicable to such applications, except that—

(1) the Commission need only consider as alternate sites for the proposed facility those sites approved for site characterization under section 403(c), and

(2) the Commission shall issue a final decision approving or disapproving the first such application not later than January 1, 1988.

SEC. 406. The Secretary, the Commission, and other appropriate Federal officials shall take such actions as they consider necessary, consistent with the protection of the public health, safety, and the environment, to achieve oper-

ational status of a repository licensed under section 405(e) as soon thereafter as possible.

TEST AND EVALUATION FACILITY

SEC. 407. (a) Not later than January 1, 1983, the Secretary shall transmit to the Congress a proposal for at least one test and evaluation facility for the purpose of developing the packaging, handling, and emplacement technology for solidified high-level radioactive waste and spent fuel from civilian nuclear activities needed to further the demonstration of disposal of such waste and spent fuel. The proposal shall include site-specific designs, specifications and cost estimates adequate to solicit bids for the construction of an initial facility, and a schedule for the construction of a facility, consistent with the objective of achieving facility operation not later than January 1, 1988.

(b) The facility shall be designed to—

(1) be constructed and operated at a site approved by the President for site characterization in accordance with section 403(c), and in accordance with applicable site characterization requirements, as provided in section 404, to preserve the availability of the site for use for a repository;

(2) accept a total of not more than three hundred packages of solidified high-level radioactive waste and spent fuel;

(3) permit continuous monitoring, management, and maintenance of the solidified high-level radioactive waste and spent fuel to be emplaced in the facility;

(4) accept waste and spent fuel packages incorporating multiple barrier design; and

(5) permit full retrievability of the waste and spent fuel to be emplaced in the facility.

(c) In formulating the proposal, the Secretary shall consult with the Commission and the Environmental Protection Agency, and shall transmit their comments on the final proposal to the Congress together with the proposal.

(d)(1) Preparation and transmittal of the proposal to the Congress is not a major Federal action significantly affecting the quality of the human environment within the meaning of section 102(2)(C) of the National Environmental Policy Act of 1969 (83 Stat. 852), but an environmental assessment shall be prepared on the proposal to accompany such transmittal.

(2) When Congress authorizes construction of the facility, the requirements of the National Environmental Policy Act shall apply, except that any environmental impact statement in connection with such facility need not consider any alternative to the design criteria set forth in subsection (b), as may have been amended by such subsequent congressional authorization.

(e) Notwithstanding any other provision of law, the test and evaluation facility authorized under this section shall not be subject to a license by the Commission: *Provided, however,* That the Secretary shall obtain the concurrence of the Commission in the siting, design, construction, and operation of the facility.

NATIONAL SITE SURVEY PROGRAM

SEC. 408. (a) The Secretary and the United States Geological Survey shall conduct a national site survey program, to be completed not later than January 1, 1986, for the purpose of identifying sites that may be suitable for site characterization for a repository in addition to those recommended by the Secretary under section 403(b).

(b) The national site survey program established by subsection (a) shall include every State that may contain acceptable sites for a repository.

(c) The Secretary shall use the results of the national site survey program established by subsection (a) in identifying and recommending sites for site characterization leading to the development of a repository in addition to the repository licensed in accordance with section 405: *Provided,* That in recommending such additional sites for site characterization, the Secretary shall consider the cost and impact of transporting to the repository site the solidified high-level radioactive waste and spent fuel to be disposed of in the reposi-

tory, and the advantages of geographical distribution in the siting of repositories.

TITLE V—LONG-TERM STORAGE OF HIGH-LEVEL RADIOACTIVE WASTE AND SPENT FUEL FROM CIVILIAN NUCLEAR ACTIVITIES

SEC. 501. Within one year after the date of enactment of this Act, the Secretary shall transmit to the Congress a proposal for a system consisting of at least one facility for the long-term, retrievable, monitored storage of solidified high-level radioactive waste and spent fuel resulting from civilian nuclear activities. The long-term storage of solidified high-level radioactive waste and spent fuel in such facilities shall not constitute an alternative to the disposal of such waste or spent fuel in a repository. Such facilities shall be designed to—

(a) accommodate spent fuel and solidified high-level radioactive waste from civilian nuclear activities;

(b) permit continuous monitoring, management, and maintenance of the spent fuel and solidified high-level radioactive waste for the foreseeable future;

(c) provide for the ready retrieval of any spent fuel and solidified high-level radioactive waste; and

(d) safely contain such solidified high-level radioactive waste and spent fuel so long as may be neces-

sary, by means of maintenance, including, but not limited to, replacement as necessary, of such facility.

SEC. 502. The proposal shall include—

(a) the general description, cost estimates, and construction schedule for a system;

(b) site-specific designs, specifications, and cost estimates adequate to solicit bids for the construction of an initial facility within the system which will demonstrate the feasibility of long-term, retrievable, monitored storage of spent fuel and solidified high-level radioactive waste; and

(c) a plan for integrating such long-term, retrievable, monitored storage facilities with the interim spent fuel storage facilities and repositories authorized by titles III and IV of this Act.

SEC. 503. In formulating the proposal, the Secretary shall consult with the Commission and the Environmental Protection Agency, and shall transmit their comments on the final proposal to the Congress together with the proposal.

SEC. 504. (a) Preparation and transmittal of the proposal to the Congress is not a major Federal action significantly affecting the quality of the human environment within the meaning of section 102(2)(C) of the National Environmental Policy Act of 1969 (83 Stat. 852), but an environmental assessment shall be prepared on the proposal to accompany

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such transmittal based upon available information regarding alternative technologies for waste storage.

(b) When Congress authorizes construction of the initial facility, the requirements of the National Environmental Policy Act shall apply, except that any environmental impact statement in connection with such facility need not consider any alternative to the design criteria set forth in section 501 of this Act as may have been amended by such subsequent congressional authorization.

(c) Any facility authorized under this title shall be subject to a license under section 202(3) of the Energy Reorganization Act of 1974 (88 Stat. 1233), except that in its consideration of the application filed by the Secretary for the initial facility, the Commission may not consider any alternative to the design criteria set forth in section 501 of this Act but shall comply with the requirements of the licensing process as otherwise provided by law.

TITLE VI—FINANCIAL ARRANGEMENTS

SEC. 601. (a) There is hereby established in the Treasury of the United States a separate account to provide for costs directly related to (1) the acquisition, lease or construction, and operation of Federal away-from-reactor interim storage facilities for spent fuel in accordance with title III of this Act; (2) the construction and operation of repositories for the disposal of such spent fuel or solidified high-level radioac-

tive waste from civilian nuclear activities in accordance with title IV of this Act; (3) the construction and operation of one or more test and evaluation facilities in accordance with title IV of this Act; (4) the construction and operation of facilities for the long-term storage of such spent fuel or solidified high-level radioactive waste in accordance with title V of this Act; (5) the related handling and transportation of such spent fuel or waste. Amounts appropriated under section 308 or otherwise appropriated to the Secretary to carry out any of the purposes of titles III, IV, V, and VI of this Act, all charges under section 303, receipts derived from the sale of any reprocessed fuel, all fees collected under section 603, and the proceeds from any obligations issued pursuant to section 602 of this title shall be deposited into the account.

(b) To the extent or in such amounts as are provided in appropriations Acts, the Secretary may draw on such account to carry out the purposes of titles III, IV, V, and VI of this Act: *Provided*, That the Secretary shall not construct or acquire any major nuclear waste facility unless the specific expenditure of funds for the initiation of such construction or acquisition is explicitly approved in an appropriation Act.

SEC. 602. (a) To carry out the purposes of this Act the Secretary may borrow money from the Treasury of the United States in amounts provided in appropriation Acts. The Secretary and the Secretary of the Treasury shall agree

on terms, maturities, and conditions of the obligations, but the maturities may not be more than thirty years. The Secretary may redeem the obligations before maturity. The Secretary of the Treasury shall decide the interest rate of the obligations considering the average market of outstanding marketable obligations of the United States Government of comparable maturities during the month before the obligations are issued. The interest payments on such obligations may be deferred with the approval of the Secretary of the Treasury but any interest payment so deferred shall bear interest. Such obligations shall be issued in amounts and at prices approved by the Secretary of the Treasury. The Secretary of the Treasury shall purchase any obligations of the Secretary issued under this section and for this purpose the Secretary of the Treasury is authorized to use as a public debt transaction of the United States the proceeds from the sale of any securities issued under the Second Liberty Loan Bond Act. Securities may be issued under that Act to purchase obligations from the Secretary under this section.

(b) Appropriations made available pursuant to section 307 of this Act and any other appropriations made to the Secretary to carry out the purposes of titles III, IV, V, and VI of this Act shall be repaid into the General Fund of the Treasury out of the account, together with interest until the date of repayment at a rate determined by the Secretary of

the Treasury taking into consideration the average market on long-term obligations of the United States during the fiscal year in which appropriations are made. The Secretary shall repay such appropriation together with interest within thirty years from the time at which such appropriations become available for expenditure after the date of enactment of this Act, and no appropriations to the Secretary are authorized to carry out the purposes of titles III, IV, V, and VI of this Act unless the amounts appropriated are deposited into the account established in section 601(a).

SEC. 603. (a) There is hereby imposed a mandatory fee in the amount of 1.0 mil per kilowatt-hour on electricity generated by civilian nuclear powerplants and sold on or after the date ninety days after the date of enactment of this Act. Such fee shall be for the purpose of paying the costs to be incurred by the Federal Government for the long-term storage and permanent disposal of solidified high-level radioactive waste and spent fuel from civilian nuclear activities.

(b) The fee imposed by subsection (a) shall be collected by the person owning and operating each civilian nuclear powerplant and shall be paid to the Treasury of the United States and deposited in the separate account established by section 601.

(c) Not later than ninety days after the date of enactment of this Act, the Secretary shall establish procedures for

the collection and payment of the fee established by subsection (a).

TITLE VII—STATE PARTICIPATION IN THE DEVELOPMENT OF REPOSITORIES AND RETRIEVABLE, MONITORED STORAGE FACILITIES FOR SOLIDIFIED HIGH-LEVEL RADIOACTIVE WASTE AND SPENT FUEL

SEC. 701. (a) The Secretary shall identify the States with one or more potentially acceptable sites for a repository or for a retrievable, monitored storage facility for solidified high-level radioactive waste or spent fuel. Within ninety days of such identification, or within ninety days of enactment of this Act, the Secretary shall notify the Governor, the State legislature, and the Tribal Council of any affected Indian tribe in any affected State of the potentially acceptable sites within such State.

(b) Each affected State and affected Indian tribe notified under subsection (a) shall have the right to participate in a process of consultation and concurrence, based on public health and safety and environmental concerns, in all stages of the planning, siting, development, construction, and operation of a repository or a retrievable, monitored storage facility that is required to be licensed by the Commission. Upon the approval of a site for site characterization for such a repository, or upon the designation of a site for such a retriev-

able, monitored storage facility, the Secretary shall promptly enter into negotiations with each such State and Indian tribe to establish a cooperative agreement under which the State or Indian tribe may exercise such right. Public participation in the negotiation of such agreement shall be provided for and encouraged by the Secretary, the States and the Indian tribes. The Secretary, in cooperation with the States and Indian tribes, shall develop and publish minimum guidelines for public participation in such negotiations, but the adequacy of such guidelines or any failure to comply with these guidelines shall not be a basis for judicial review.

(c) The cooperative agreement may include, but need not be limited to, the sharing in accordance with applicable law of all technical and licensing information, the utilization of available expertise, the facilitating of permitting procedures, joint project review, and the formulation of joint surveillance and monitoring arrangements to carry out applicable Federal and State laws. Such cooperative agreement shall provide procedures for negotiating and resolving objections of the State or Indian tribe in any stage of the planning, siting, development, construction, or operation of such a facility within the State: *Provided, however,* That any such agreement shall not affect the Nuclear Regulatory Commission's authority under existing law.

(d) For the purpose of this part of this title, "process of consultation and concurrence" means a methodology by which the Secretary (A) keeps the State or affected Indian tribe fully and currently informed about the aspects of the project related to any potential impact on the public health and safety, (B) solicits, receives, and evaluates concerns and objections of the State or affected Indian tribe with regard to such aspects of the project on an ongoing basis, and (C) works diligently and cooperatively to resolve, through arbitration or other appropriate mechanisms, such concerns and objections.

(e) The Secretary and the State or affected Indian tribe shall seek to conclude the agreement required by subsection (b) not later than one year after the date of notification under section (a). The Secretary shall report to the Congress annually thereafter on the status of the agreement approved under subsection (c). Any report to the Congress on the status of negotiations under subsection (b) of the agreement under subsection (c) by the Secretary shall be accompanied by comments solicited by the Secretary from the State or affected Indian tribe.

(f)(1) The Secretary shall notify the Governor, the State legislature, and the Tribal Council of any affected Indian tribe in an affected State at least ninety days prior to submitting an application to the Commission for authorization to

construct a repository or retreivable, monitored storage facility of the Secretary's intention to file such application.

(2) If at any time after the Governor or an affected Indian tribe has received the notice required under paragraph (1), but no later than ninety days after receipt of such notice, the Governor or the Indian tribe notifies the Secretary in writing of objections to the proposed repository or retrievable, monitored storage facility, the Secretary shall promptly transmit such objections together with the Secretary's comments and recommendations to the Congress.

(3) If the Governor or the Indian tribe has filed objections in accordance with paragraph (2), the Secretary shall not submit such an application and shall suspend further site-specific activities on the proposed repository or retrievable, monitored storage facility if during the sixty-day period of continuous session following submittal to Congress of the objections, either House of Congress passes a resolution pursuant to section 703 stating in substance that the proposal for the repository or retrievable, monitored storage facility does not sufficiently address State and local concerns to permit the Secretary to apply to the Commission for an authorization to construct the facility.

SEC. 702. (a) For the purpose of this Act (1) continuity of session is broken only by an adjournment of Congress sine die; and (2) the days on which either House is not in session

because of an adjournment of more than three days to a day certain are excluded in the computation of any period of time in which Congress is in continuous session.

(b) Sections 702 through 706 of this Act are enacted by Congress (1) as an exercise of the rulemaking power of the Senate and the House of Representatives, respectively, and as such they are deemed a part of the rules of each House, respectively, but applicable only with respect to the procedure to be followed in that House in the case of resolutions described by section 703 of this Act; and they supersede other rules only to the extent that they are inconsistent therewith; and (2) with full recognition of the constitutional right of either House to change the rules (so far as relating to the procedure of that House) at any time, in the same manner and to the same extent as in the case of any other rule of that House.

SEC. 703. For the purposes of this Act "resolution" means only a resolution of either House of Congress, the matter after the resolving clause of which is as follows: "That the believes that the proposed development of a repository or retrievable, monitored storage facility at within the State of , which is the basis of objections transmitted to Congress by the Secretary of Energy on , 19 does not sufficiently address State and local concerns to permit the Secretary

to apply to the Nuclear Regulatory Commission for an authorization to construct such repository or retrievable, monitored storage facility, the blank spaces therein being appropriately filled.

SEC. 704. (a) No later than the first day of session following the day on which objections by a State or Indian tribe are transmitted to the House of Representatives and the Senate under section 601(f), a resolution, as defined in section 703, shall be introduced (by request) in the House by the chairman of the committee to which the report is referred, or by a Member or Members of the House designated by such chairman; and shall be introduced (by request) in the Senate by the chairman of the committee to which the report is referred, or by a Member or Members of the Senate designated by such chairman.

(b) A resolution with respect to a proposed facility which is the basis of such objections shall be referred to the appropriate committees of the House and Senate (and all resolutions with respect to the same report shall be referred to the same committee) by the President of the Senate or the Speaker of the House of Representatives, as the case may be. The committee shall make its recommendations to the House of Representatives or the Senate, respectively, within forty-five calendar days of continuous session of Congress following the date of such resolution's introduction.

SEC. 705. If the committee to which is referred a resolution introduced pursuant to subsection (a) of section 604 (or, in the absence of such a resolution, the first resolution introduced with respect to the proposed facility which is the basis of such objections, has not reported such resolution or identical resolution at the end of forty-five calendar days of continuous session of Congress after its introduction, such committee shall be deemed to be discharged from further consideration of such resolution and such resolution shall be placed on the appropriate calendar of the House involved.

SEC. 706. (a) When the committee has reported, or has been deemed to be discharged (under section 705) from further consideration of, a resolution with respect to a reorganization plan, it is at any time thereafter in order (even though a previous motion to the same effect has been disagreed to) for any Member of the respective House to move to proceed to the consideration of the resolution. The motion is highly privileged and is not debatable. The motion shall not be subject to amendment, or to a motion to postpone, or a motion to proceed to the consideration of other business. A motion to reconsider the vote by which the motion is agreed to or disagreed to shall not be in order. If a motion to proceed to the consideration of the resolution is agreed to, the resolution shall remain the unfinished business of the respective House until disposed of.

(b) Debate on the resolution, and on all debatable motions and appeals in connection therewith, shall be limited to not more than ten hours, which shall be divided equally between individuals favoring and individuals opposing the resolution. A motion further to limit debate is in order and not debatable. An amendment to, or a motion to postpone, or a motion to proceed to the consideration of other business, or a motion to recommit the resolution is not in order. A motion to reconsider the vote by which the resolution is agreed to or disagreed to shall not be in order.

(c) Immediately following the conclusion of the debate on the resolution with respect to a reorganization plan, and a single quorum call at the conclusion of the debate if requested in accordance with the rules of the appropriate House, the vote on final approval of the resolution shall occur.

(d) Appeals from the decisions of the Chair relating to the application of the rules of the Senate or the House of Representatives, as the case may be, to the procedure relating to a resolution with respect to a reorganization plan shall be decided without debate.

SEC. 707. In considering any objections by a State or Indian tribe submitted to the Congress pursuant to this title, the Congress may obtain the views and comments of the Nuclear Regulatory Commission on such objections. The provision of views by the Commission shall not be construed as

binding the Commission with respect to any licensing action pertaining to the facility which is the subject of such objections.

SEC. 708. The passage of a resolution by the Congress pursuant to this title shall in no way be considered as binding with respect to any licensing action of the Nuclear Regulatory Commission pertaining to the facility which is the subject of such resolution.

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